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EXPERIMENTS ON DIGESTION.

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(*Translated from the German.**)

MY object in the following experiments was to ascertain, more particularly, the relative digestibility of different articles of food in dogs and cats; and, for this purpose, I fed the animals with several sorts of food at the same time.

EXP. 1.—A dog of a middling size, which for some time previously had been fed upon potatoes, received as much as he could eat of boiled, raw, and roasted horseflesh, in pieces of from half to one ounce in weight. He ate, in all, about a pound. After three hours he was killed; the digestion had, in the mean time, made but little progress, and there was only a very small quantity of chyme collected at the pylorus. The pieces of boiled meat were every where, at the surface, dissolved into chyme, and were strongly acid, even in the middle, and after being washed with water. The raw pieces were less dissolved, but had become of a livid hue; and were also less strongly acid at the surface, and in the middle not at all so. The roasted pieces were, even at the surface, not perceptibly altered; they were covered with acid chyme, but upon being washed with water, showed no further acidity. The alteration of the boiled and raw pieces increased gradually from the cardia to the pylorus; it was imperceptible at the cardia, and greatest at the pylorus. There was no difference between the pieces which lay at the parietes of the stomach, and those which lay in the centre. The stomach was firmly contracted about the food, and without any peristaltic motion.

EXP. 2.—A large dog, that had been fed with potatoes, received in the morning, at 8 o'clock, from ½ to 1½ ounce pieces of boiled, raw, and roasted horseflesh; in all about 2½ pounds. At three in the afternoon (after seven hours) he was killed. Although the digestion had proceeded so far that nearly two ounces of chyme were collected at the pylorus, yet the pieces of meat which lay at the cardia were still unchanged. The alteration increased gradually towards the pylorus, and here the pieces were about half dissolved, none being entirely so. The boiled meat was the most dissolved, and was most acid at its centre. The raw followed next; and by it the blue paper was reddened in the inside, as well as at the surface. The roasted pieces were also acid, even after being washed, but blue paper was scarcely altered by the inside. A peristaltic motion was present at the pylorus, which from time to time separated itself from the cardia, by the strong contraction of its circular fibres. The cardia was firmly contracted about the food, and without any perceptible motion. The thermometer stood in the stomach and chest at 32° Reaumur, and in the lower parts of the abdomen at 31°.

EXP. 3.—A dog of moderate size was fed with a soup made of potatoes, which was mixed with several large pieces, and a little tallow, with which the potatoes were boiled. Six hours after, the soup had disappeared from the stomach; the larger pieces were but little altered, and only somewhat rounded at the edges. There was besides a little chyme, mixed with a few fleshy fibres that were probably left from the last meal; it was strongly acid, but the pieces of potato were but slightly so at their surface, and not at all at their centre. The gall bladder was much distended, and contained 2½ drachms of bile. Microscopic observation showed that the starch globules of the potato-soup were still to be found unchanged, and in great number, in the intestines. The temperature of the stomach and chest was 32° Reau., of the liver and lower parts of the abdomen 31°.

The stomach, as it contained very little food, was much collapsed, and had a peristaltic motion in its whole extent, which, however, was strongest at the pylorus. This motion ceased after half an hour, and

* We are, as on a former occasion (in THE LANCET for August 10), indebted to a friend for the following interesting paper.

when I brought the two poles of a galvanic apparatus into contact with the stomach, strong contractions ensued; the separation of the pylorus from the cardia was particularly plain. I had laid bare the nervus vagus in the neck, and brought the two poles into contact with it, but after the spontaneous motion had ceased, no effect was produced in the stomach. On the other hand, as long as the peristaltic motion lasted, it was greatly increased by the galvanic excitement of the nervus vagus.

Exp. 4.—A well-fed dog, that would eat no vegetable food, was fed with 1 ounce of bread, 2 ounces of roasted veal, which was very tender, the same quantity of raw ham, and 4 ounces of boiled unsalted beef. He was killed nine hours after. Three-fourths of the food were dissolved to chyme. The boiled beef was entirely digested, and only to be recognised by a few fibres mixed with the chyme; the bread was half dissolved, and its remaining part, which was mostly crust, was, like the chyme, strongly acid, even in the middle part. One-fourth of the raw ham had disappeared, and the other part, which was half fat, did not appear to be at all altered, and was not acid after being washed with water. The roasted veal was little changed, and acid only at the surface, and not in the inside. The peristaltic motion was observed at the pylorus, but not at the fundus; the temperature of the chest and abdomen was $31\frac{1}{10}°$ Reau.

Exp. 5.—A middling-sized dog, which had fasted the day before, was fed with 6 oysters, 2 ounces of smoked salmon, 1 of salt herring, and 2 of boiled pork, mutton, and unsalted beef. He was killed six hours after. The oysters were perfectly dissolved, except the closing muscle of one, and their parts no longer perceptible in the chyme. A third of the pork, and three-fourths of the mutton and beef were dissolved; the acid of the last was the strongest. The pieces of salmon were still further divided, but not much digested; the herring was perfectly unchanged, and was acid only at the surface, and not in the inside.

Exp. 6.—Two half-grown cats, that had fasted twelve hours, were fed at the same time with similar pieces of raw, boiled, and roasted veal; and further, with boiled beef and fish, as much as they would eat. One of them was killed three hours after. The stomach was without motion, and firmly contracted about the food; the digestion had made but little progress, and about two drachms only of chyme were collected at the pylorus. The whole mass of the food had formed a ball, in which the different parts were not so easily recognised as in the dog; for cats tear and masticate their food, while dogs swallow theirs in large pieces. At the cardia, the surface of this ball was neutral, and the food was perfectly unchanged. In the middle, between the cardia and pylorus, blue litmus paper was somewhat reddened, and at the pylorus itself as strongly as usual, by chyme. The ball was cut through the middle with a knife, and it was seen that the degree of acidity was the same at the parietes of the stomach and in the inside of the mass. It increased here, also, towards the pylorus. The beef was the most digested, and the boiled veal more than the raw; the fish and roasted veal, however, were still unaltered.

The second cat was killed after seven hours. The greatest part of the contents of the stomach were dissolved to chyme, and the stomach itself was three-fourths empty; the peristaltic motion, particularly at the pylorus, was also observed. A few pieces of fish were found among the undigested parts, the rest was mostly raw and roasted veal.

The temperature of the abdomen was 31° Reaumur, of the chest and stomach $31\frac{1}{10}°$ Reaumur.

Exp. 7.—A full-grown cat was fed with potato-soup and a piece of old cheese, and, after three hours, killed. The cheese was mostly digested, and its small remaining part was strongly acid, even in the inside. The potato-soup was little altered, and only rendered somewhat more fluid; it very slightly reddened the litmus paper.

Exp. 8.—A dog was fed with boiled, raw, and roasted veal, boiled fowl, fish, a little boiled unsalted beef, and a piece of old cheese. He was killed four hours after. The cheese was entirely dissolved, and only to be recognised by the smell of the chyme. The boiled fowl was entirely, the beef and veal for the most part, digested, and their remains had fallen into small pieces. The raw veal was dissolved at its surface, and its colour had become livid; it was acid at the surface, and neutral in the middle. The pieces of fish were still further divided, but it appeared to be merely through the mechanical motion of the stomach, for the muscular layers of fish were very loosely connected. The larger pieces, after washing, were but slightly acid; whereas the remains of the boiled beef were strongly acid, even in the middle.

Exp. 9.—A cat was fed in the morning, at nine o'clock, with flour and potato-soup, and further, with a little carrot and boiled beef. It was killed at twelve o'clock. A piece of meat, which the animal had swallowed last, and which was found at the cardia in the midst of the soup, was still unchanged. The rest at the pylorus was quite dissolved; the soup was become somewhat more fluid, and it was slightly acid; the carrot and a few pieces of potato were unaltered, and without acidity in the inside.

Remark.—I have often observed in dogs, that the order in which the different sorts of food are swallowed considerably alters the

relative digestibility; for I have several times seen indigestible matter which was swallowed first, and therefore came first to the pylorus, digested before other food which was more easily digestible, but which being swallowed later, came later to the pylorus.

Exp. 10.—A dog of a middle size, which had been fed upon flour and potato-soup, and afterwards allowed to fast 24 hours, was fed at nine o'clock in the morning with one or one and a half ounces of old cheese; two, the same quantity of Dutch cheese; three, the meat from the claws and tails of two large crabs; four, three ounces of roasted pork; five, an ounce of the fat of a smoked goose; and six, with four ounces of boiled unsalted beef. At half-past one he was killed; nearly one-half of the whole mass was changed into chyle; a pretty strong peristaltic motion was observed at the pylorus. I observed also an undulating motion along the course of the large curvature; the small curvature, however, was perfectly motionless.

1. The boiled beef, of which a few small pieces were still visible, was dissolved. 2. The old cheese was entirely, and the Dutch cheese mostly, dissolved; its remaining part was chiefly rind, the surface and inside of which were strongly acid, even after washing with water. 3. The roasted pork was not much altered at the surface, although the inside was somewhat acid. 4. The crabs'-flesh and goose fat were found in the chyme perfectly unchanged; the litmus paper, however, was slightly reddened at the surface of the crabs'-flesh after it was washed, but not in the inside. The fat, on the contrary, showed no acidity after being washed, even at the surface.

Exp. 11.—A distinguished individual of this city desired to know if it was true, as is generally believed, that oysters are more easily and quickly digested, if a little cheese be eaten at the same time. I was aware how difficult it would be to institute experiments upon this question upon dogs, for these animals, even after having fasted 24 hours, will never voluntarily devour oysters, so that they must always be given to them by force. However, I learnt, from Exp. 5, that when dogs have once swallowed oysters, they digest them very easily, and do not vomit them, as one would expect, after so much aversion. I therefore procured two dogs, of the same size, and apparently of the same age. Both were allowed to fast 16 hours, so that in every respect they were nearly similar, except in colour, for the one was black and the other white. They were fed, or rather the food was forced down their throats, at eight o'clock in the morning. The white dog received eight oysters, and a small piece of bread; the black, eight oysters, a piece of bread, and about 1½ oz. of cheese. At eleven o'clock, or three hours after, both dogs were killed. In the white one, which had received oysters and bread only, I found 8¼ drachms of chyme of the usual quality, together with four pieces of undigested oyster, which, after washing with water, weighed 4¼ drachms; the whole of the contents of the stomach, therefore, weighed 13 drachms. In the other, which had eaten cheese with the oysters, there were 12½ drachms of very viscid chyme, and three small cartilaginous pieces of undigested oyster, which weighed 1 drachm 2 scruples; the weight, therefore, of the contents of the stomach of this dog were 14 drachms 1½ scruple. The dog which had received the cheese had accordingly digested in the same time, and with the same number of oysters, 2 drachms 50 grains more than the one that had been fed with oysters and bread only. The chyme, also, in the stomach of the former, was much more acid than in that of the latter; upon this point my experiments upon the degrees of acidity in the alimentary canal may be consulted.

I now made some microscopic observations upon the manner of the dissolution of the fleshy fibres in the stomach and intestines of the dog.

Exp. 12.—Raw meat obtains at the beginning of digestion a rough, ragged, appearance, which is particularly distinct under water. This raggedness is soon dissolved from the larger pieces, and may afterwards be found in the chyme. If a piece of the same be examined under the microscope, it is found that the muscular fibres do not separate from one another lengthwise, but remain together in large pieces. In fresh meat it may be seen, that the muscular fibres are articulated, and marked with fine transverse lines upon the spaces between the articulations. They are firmly connected at the sides, and are with difficulty separated from one another lengthwise. This connection remains during digestion, and the gradual solution takes place so, that the joints separate themselves into pieces which become gradually smaller, and in this condition fall apart lengthwise. At last, these pieces dissolve into very small globular bodies.

Boiled flesh is easily separated into fibres lengthwise; the articulations of the fibres, and also the fine transverse lines, may be seen here, as well as in raw flesh: it is, however, more condensed, and the fibres are thinner, than in the raw condition, as may be seen in the fibres of boiled veal, when compared with raw veal. The first change which takes place in the boiled flesh of the mammalia in the stomach of the dog is, that the muscular fibres separate themselves from one another lengthwise. Roasted meat is not so easily separated into single fibres, and this, together with their greater hard-

ness, appears to be the reason why it is harder to digest. In proportion as the fibres separate themselves in this manner lengthwise, they also fall into pieces transversely, and assume the appearance of having been cut with a sharp instrument. The pieces of muscle are always at first so sharply edged, and for the most part remain so during their continuance in the stomach. In the duodenum, however, their edges become rounded, and the pieces appear to dissolve gradually, like a crystal in water, till at last a very small part only is left. The chyme in which they are found has a fine granular appearance.

The solution of boiled fish in the stomach of the cat takes place somewhat differently. The muscular fibres of fish are much larger than those of the mammalia and birds; they have also fewer articulations, and are more angular. They are strongly marked with longitudinal lines. These longitudinal lines are sometimes also to be seen in the muscular fibres of the mammalia; and, on the other hand, the transverse may be seen in the fibres of fish, though both cases happen but seldom. In the stomach of the cat, the fibres of fish separate themselves lengthwise from one another, and at first appear with broken edges. The further solution, however, is quite peculiar. At first, large transverse fissures, which often go as far as the middle, arise at the sides, at which the fibres gradually fall into smaller pieces. The fibres now begin to dissolve at the end, and in the direction of the longitudinal lines, into sets of large globules, which gradually separate from one another, and in this condition may be afterwards found in the chyme.

Exp. 13.—After I had obtained from the manner of the solution of the mammalia fibres, a sign of the degree of perfection of the digestion, I wished to know whether the disturbance of the digestion, which I had experienced in myself from drinking coffee after meals, could be explained by experiments upon dogs. I therefore gave a dog a little coffee, with milk, directly after he had eaten several large pieces of meat. He was killed six hours after, and I found that the digestion had been delayed longer than usual; but in the manner of the solution of the muscular fibres, I perceived no remarkable difference. I now conjectured that the coffee was absorbed from the stomach, and that afterwards the digestion proceeded in its regular course. I therefore fed a dog with meat chopped very small, and gave him a little coffee, half an hour after. I killed him four hours after, and found that the greater part of the meat had gone over into the intestines, but little or not at all altered, and also that the unchanged fibres of meat, that could therefore have been little digested, were to be seen as far as the cæcum. In these the microscope could detect but few traces of solution, although in general the fleshy fibres disappear entirely below the ilium.

I will now detail the result of my experiments upon the relative digestibility of food in the stomach, and on the movements of the stomach.

The first chief result which is obtained from my experiments upon digestion is, that vegetable food is more difficult of digestion than animal, and raw animal more difficult than boiled. Connected with the more difficult digestibility of vegetable food, is its longer continuance in the stomach and cæcum than usual. The stomachs of ruminating animals are often not empty after five days fasting; in the rabbit much food is still to be found in the stomach after a fast of 24 or 36 hours; and in carnivorous animals, pieces of potatoe and carrot that were devoured at the same time with meat, may be found still unaltered, although the meat be long ago digested. Even bread is less digestible than meat, though of all vegetable food the easiest.

It may be asked, how the longer continuance of vegetable food in the stomach is possible, as the peristaltic motion is as strong in herbivorous and omnivorous, as in carnivorous animals. An explanation of this is afforded by the different forms of the stomach. In all herbivorous animals the small curvature of the stomach is very small, and the œsophagus is inserted near to the pylorus, while the fundus, on the other side of the œsophagus, is very much extended. The large curvature, which includes the whole of the fundus, is, on the contrary, much more developed; and the pylorus itself is short in proportion to the fundus.

In carnivorous animals, on the other hand, the small curvature of the stomach is more developed in proportion to the large; the œsophagus is inserted nearly at the fundus, and the pylorus is, in proportion to the fundus, longer than in the herbivorous class.

If, now, the nature of the peristaltic motion of the stomach be more nearly considered, it will be seen to be very different in carnivorous and herbivorous animals. The motion of the stomach may be compared to the peristaltic motion of the intestines, since it consists, like that, of alternate contractions and expansions of the circular and longitudinal muscular fibres. The only difference is, that in the intestines this motion is on all sides uniform, whilst in the stomach the motion of the small curvature is less the shorter it is, and, on the contrary, the more extensive the large curvature is, the greater will be its peristaltic motion, so that in herbivorous animals, the motion of the small curvature may disappear almost entirely. The difference between the peristaltic motion of the stomach and that of the intestines, therefore, will be the greater the

more the small curvature is shortened in proportion to the large, and the more it is expanded, and, therefore, at the same time, the pylorus lengthened, the more they will resemble each other; for the pylorus itself has nearly one uniform expansion of its muscular fibres, and, in consequence, its motion, like that of the intestines, is on all sides uniform.

The motion of the stomach may, accordingly, be considered as defective, since it takes place only upon the large curvature, while the small is nearly motionless. It is evident that this partial motion will be greatest in herbivorous animals, and that in the larger proportional development of the small curvature, and lengthening of the pylorus of carnivorous animals, the motion of the stomach will be more similar to that of the intestines.

The different kinds of motion in the stomach have a very different influence upon the motion of its contents. In herbivorous animals, when the large curvature is chiefly put in motion, the food is moved only along the course of the larger, and at the smaller is nearly motionless. If, now, the food, as is generally the case in those animals—for instance, in the rabbit—as long as it remains at the fundus, forms one consistent mass, it cannot otherwise happen, than that by the continued partial forward movement of this mass by the large curvature, it will revolve upon its axis in the direction of the peristaltic motion, and be pressed into a ball which takes the form of the floor of the stomach. All the contents, therefore, will not be moved forward towards the pylorus, but only that part which is changed into chyle at the surface of the ball, while the remaining part will continue to turn round in the fundus of the stomach. In this way the food in the stomach of herbivorous animals cannot go over into the intestines before it is quite dissolved, and this motion of the stomach is perfectly correspondent with the long continuance of the food in that organ. It is, however, very different in carnivorous animals. There the motion of the stomach is, corresponding with the quicker digestion, so arranged, that the rotatory motion of the food takes place either not at all, or at most but imperfectly; for the food at the small curvature is moved, although slowly, forwards towards the pylorus, and, therefore, put into a more progressive motion.

The reason, therefore, why the food continues longer in the stomach of herbivorous animals is, that through the peculiar structure and motion of the stomach it is set into a rotatory motion, whereas, the progressive motion into which the stomach of carnivorous animals sets its contents, is correspondent with its quicker digestion.

That the omnivorous class stands in the middle between these two is self-evident.

It appears of importance to remark, that in man, in the different states of health, the one or the other kind of motion may preponderate, and that the stomach may accordingly develop itself proportionately to the larger quantity of vegetable or animal food. The fundus will extend itself when the vegetable diet preponderates, as may be seen in old dogs which have always been fed upon vegetables. In this case the digestion will proceed more slowly, and through the rotatory motion the food will be kept longer in the stomach; in the opposite case, on the contrary, the food will be soon removed from the stomach by its preponderating progressive motion. If, now, in the usual formation of the stomach of man, indigestible vegetable food be taken, it will, like digested animal substance, be quickly removed from the stomach into the intestines, and thereby produce a disturbance of the cæcal digestion.

I now proceed to speak of the act of vomiting, in the different forms of the stomach. The anti-peristaltic motion of the stomach bears the same relation, in the different forms of the stomach of carnivorous and herbivorous animals, to the evacuation of the food by vomiting, as the peristaltic motion bears to its further progress through the pylorus into the intestine. All those herbivorous animals in which a rotatory motion of the contents of the stomach takes place, either do not vomit at all, or with great difficulty; for the food is not urged by the anti-peristaltic motion towards the œsophagus, but merely set into a rotatory motion in the opposite direction, so that notwithstanding it be pressed upon all sides, it cannot be driven out. The animal vomits, therefore, with the greater difficulty, in proportion as the stomach is so formed, that its contents are set into a perfect rotatory motion, as in the rabbit, horse, &c. &c. It has been hitherto said, that horses are prevented from vomiting by the spiral valve at the œsophagus; but this valve can no more prevent the regress of the food than its ingress into the stomach, since its action in the anti-peristaltic motion is merely the reverse of that in the peristaltic, viz., that like the cardia, which is without valves, it alternately opens and shuts, and so, at every time of opening, allows the egress as well as the ingress of the food. The reason, therefore, why these animals during nausea cannot vomit, must be sought alone in the peculiar form and motion of the stomach.

On the other hand, vomiting takes place the more easily in proportion as the stomach is lengthened, and is in construction more similar to the intestines, for the food may then be driven towards the openings, either backwards or forwards, without being put into a rotatory motion. Hence, dogs and all carnivorous animals vomit without difficulty, and even in man this difference is remarkable, for children, on account of the similarity of their stomach to that of carni-

vorous animals, vomit easily, while, on the contrary, to older people, whose stomach resembles that of the herbivorous class, this process is more difficult.

Hillifield (*Experimenta Quædam de Venenis*, Goettingen, p. 30), was already acquainted with the fact, that rabbits could not vomit. I have myself likewise endeavoured to excite vomiting in a rabbit by a dose of two grains of emetic tartar. A quarter of an hour after nausea was produced, together with great disquietude and anxiety; however the animal did not vomit. I have found also, by a similar experiment, that the guinea pig, which has the same kind of stomach, is not capable of this process. These phenomena do not contradict the experiments of Majendie upon the action of the abdominal muscles during vomiting: for where vomiting is possible, the motion of the stomach gives merely the direction to its contents in which they are to be thrown out; vomiting itself is produced by the action of the diaphragm and abdominal muscles.*

The rumination of ruminating animals appears to take place so, that the food in the first stomach is not at all moved; or at least not in a rotatory manner, for it is generally too fluid, or too little consistent, to be able to form a round ball. However, in this form, small quantities of the chymy mass are more easily pressed into the œsophagus by the action of the diaphragm and abdominal muscles. This process has been ably explained by M. Flourens.

I must now speak of diseased excitement of the motion of the stomach. There is another circumstance which causes a morbidly quick motion of the food from the stomach into the intestines, namely, too great fluidity. We have already seen, that the food corresponding to its time of continuance in the stomach, becomes more or less consistent. This happens, also, with liquid articles of food, for milk is changed in the stomach of calves into a cheesy lump of almost stony hardness, from which all the whey has disappeared. In milk this is caused, evidently, by its speedy coagulation, and the absorption of the whey by the vessels of the stomach; and in other liquids which are not coagulable, by the simple absorption of their fluidity. It must not be supposed that watery food is in itself hurtful to the digestion, for its fluidity is absorbed and the solid matter remains behind. However, there are fluids which, from their stimulating or indigestible qualities, either always, or only under certain circumstances, quicken the motion of the stomach so much, that the fluidity cannot be absorbed before it, as well as the solid parts, are removed from the stomach without being digested. This, it appears to me, is the cause of the prejudicial effects of milk, raw eggs, coffee, &c., which I have observed, partly upon myself and partly upon animals.

Milk, particularly in weak stomachs, quickens the motion of that organ so much, that even before it is coagulated it disappears through the pylorus. The digestion of the food with which the milk is taken will hereby be disturbed, and as it goes mostly undigested into the intestines, will also cause a disturbance of the cæcal digestion, which will be followed by diarrhœa. The action of beer, particularly only half fermented beer, is similar.

The same is the case with the raw yolk of eggs, the nourishing properties of which I do not dispute, but merely maintain, that in weak stomachs it is hardly digestible. Hard-boiled eggs are more easily digested than raw, as they do not excite the motion of the intestines.

The effects of cold water are also similar. However, here it is not the water, but merely the cold which improperly affects the motion of the stomach, for in weak stomachs hot water always produces the most beneficial effects.

Of all fluids, the prejudicial action of coffee is the greatest. The carbonisation of a part of its oil, during roasting, appears to be the cause of this property. It is not merely itself indigestible, but also makes all other food, with which it is taken, likewise indigestible. From its stimulating properties the motion of the stomach is so greatly increased, that the whole contents disappear from the stomach before they are digested. This, in the healthy state, and when the stomach is overcharged, may relieve those complaints which are mechanically produced by the distention of the stomach, and it has therefore been generally thought that coffee promotes digestion. However, in fact, it disturbs it, and can only cause a momentary relief, which is presently followed by a greater evil, namely, a disturbed cæcal digestion. It is evident that coffee taken in the morning, and when the stomach is empty, cannot have this effect, for it can only go quickly through the intestines to the already digested excrement, without disturbing the digestion of other food.

There still remains something which requires illustration, namely, how the stomach of amphibious animals and fishes, which is nearly uniformly extended on all sides, or at least whose small curvature is but little shortened, can detain its contents so long as is usual in these animals. The reason of this may be easily perceived if we consider

* We must here refer the learned author to the more correct views of Dr. Marshall Hall on the act of vomiting, contained in THE LANCET for 1837-8, vol. ii., p. 99.—ED. L.

that the peristaltic motion is here so slow and weak, that it is hardly to be recognised, and has been, indeed, altogether denied by several naturalists.

The degree of digestibility of meat is different, according to the way in which it is prepared, and also according to the different animals, and the parts from which it is taken.

Roasted meat is harder to digest than either boiled or raw. Its more difficult digestibility is probably caused by the partial carbonisation and hardening of its muscular fibres, which even after separation from one-another go over into the intestines mostly unchanged, while the fibres of boiled meat are entirely dissolved. That according to the degrees of roasting, gradual approximations to boiled meat may take place is self-evident.

Smoked or salted meat, such as ham, is easier to digest than roasted, and harder than boiled meat. To preserve the meat from spoiling it is saturated with the carbon of the smoke, and is rendered the more indigestible the more it is smoked, and in consequence dried. All substances which are used for the preservation of meat, render it, at the same time, indigestible, as it thereby becomes less soluble, for the most easily decomposible meats are in general the most easily digestible. Fat, particularly when surrounded by cellular tissue and thoroughly smoked, is still less digestible than roasted meat.

Cheese, new, as well as old, is nearly as digestible as boiled meat; nevertheless, its peculiar volatile part brings much foreign matter into the blood, which strongly stimulates the secreting organs, and gives rise to various complaints of the bladder. I have found that the flesh of the lower animals is in general harder to digest than that of the higher classes, and the easiest of all is the flesh of the mammalia and birds. Fish boiled, as well as salted, such as salmon, herring, &c., is harder to digest than the roasted flesh of the mammalia, and roasted and salted fish more so than boiled. The fish of the crustacea, as is shown by my experiments upon crab's-flesh, is still more indigestible and injurious, and is not in the least altered, even when the roasted meat begins to be digested. This explains the fact that fish and crustacea require very healthy digestive organs to be digested, and very easily excite intermittent fevers in people who are a little disposed to disease. I am acquainted with an example of this in the village of Binnenwalde, near Rheinsberge, where, during autumn, a great many people were afflicted with an intermittent fever every Wednesday and Saturday. Upon further inquiry, it was found, that at this season of the year, the Tuesdays and Fridays were employed in fishing, and that most of the inhabitants ate fish in the evening or on the following day. With the changing of the day for fishing, the day upon which the fever broke out changed also; and when I explained to the people the effects of fish, and the sickly ate no more, the fever became more rare, and at last ceased entirely.

The violent fits of illness which in many people follow the eating of crabs, &c., and even the poisonous effects of certain fishes, appear to arise from their general indigestibility.

Oysters are the only exception to the indigestibility of the flesh of the lower animals. Nevertheless, that there is a certain similarity between them and fish, is shown by their frequent poisonous effects. It is also not known whether the oysters are really quickly digested, or whether, from an excitement of the motion of the stomach, they go speedily through the intestines, either partly or wholly unchanged. This is the more probable, as in many people they are apt to produce diarrhœa. The chyme also of oysters is much less acid than that of meat.

The boiled flesh of fowls and pigeons I found was easier to digest than boiled beef or veal. In general, the flesh of young animals, especially veal, appears to excite the motion of the stomach, and by causing diarrhœa, to render its digestion less perfect than that of the flesh of full-grown animals. I have not observed any difference in the digestibility of the lean parts of mutton, pork, or beef, although pork and mutton are generally less digestible, on account of the larger quantity of fat which they contain.

In all these different sorts of meat I have observed that their digestibility is much promoted by a perfect distinction of their living principle, by allowing them to hang in the air more or less time, according to the season of the year. I have often seen in cats and dogs, that the flesh of old animals, boiled perfectly fresh, is as indigestible as when eaten raw, and in man also with a weak digestion, the same difference in the digestibility of fresh and stale meat may be observed. The flesh of domestic animals, by becoming a little stale, is more easily digested, and is then also more digestible than that of wild animals. Among these latter, venison and wild boar are hardest to digest.

In general, it may be inferred from my observations, that it is of great importance to establish a difference between the digestibility and nourishing properties of food, since very nutritious but indigestible substances, such as smoked and roasted meat, are often more injurious than such as are less nutritious but easily digested, as the finer vegetables, spinach, asparagus, &c.

On the other hand we must not determine upon the digestibility, or at least the nourishing properties of food, from the feeling of facility with which it is removed from the

stomach. All those kinds of food which, by strongly exciting the motion of the stomach, go quickly into the intestines, may be easily borne by the stomach, but are very imperfectly dissolved, and at last are followed by all the consequences of disturbed digestion. They afford the body, therefore, only a very small quantity of digestible matter, and are again excreted mostly unchanged. On the contrary, there are other kinds of food which, on account of their long continuance in the stomach, appear for the moment to be hard to digest, yet are nevertheless perfectly digestible, and never followed by bad consequences upon passing into the rest of the intestines.

There are therefore really indigestible substances which, under certain circumstances, and taken in moderate quantity, are easily borne by the stomach, for instance, oysters, milk, eggs, coffee, &c.,; and there are also substances easily digestible, which sometimes appear to be less easily borne by the stomach, as is sometimes the case with boiled meat, particularly when taken in large quantities, which, on account of their perfect chymification, always remain longer in the stomach.

GRAY'S HOSPITAL, ELGIN.

REPORT OF SURGICAL CASES

Occurring between September 1st, 1838, and September 1st, 1839,

SELECTED FROM THE MORE IMPORTANT CASES ADMITTED UNDER THE

CARE OF JOHN PAUL, M.D.,

Surgeon to the Hospital.

LITHOTRITY.

Case I.—James Stewart, æt. 51, was admitted September, 1838, with all the symptoms of stone in the bladder. He had felt pain in voiding his urine for five or six months, and of late he strains so much at the time of passing it, as frequently to produce prolapsus ani. He has an inguinal hernia on each side, and wears a double truss; he is of a spare habit of body, but otherwise in good health. On sounding, a calculus was readily detected; it was evidently not very large, and the case was thought suitable for the process of crushing. As the urethra was small, it was necessary, before using the lithotrite, to dilate it by the occasional introduction of steel bougies. When the urethra was opened up as much as it would admit of, two small calculi, about the size of peas, were passed.

Sept. 27. About six ounces of tepid water being injected into the bladder, the screw lithotrite was introduced, and the stone seized at once. The screw was then turned down, and the disintegration of a portion of the calculus easily effected. The same process was again repeated before the instrument was withdrawn.

28. Has passed some sand.

29. Has passed two small fragments of the stone. Let him drink plentifully of diluents, with sweet spirits of nitre.

30. Has passed a few more fragments.

Oct. 1. The lithotrite was again used, and the calculus, or portions of it, seized three different times. Had very little pain during the operation.

4. Has passed a quantity of sand. No pain. Ordered to have 4oz. of gin, as a diuretic, in the course of the day.

6. Voided three laminæ.

8. Has voided some more. Let him have the gin to-day.

11. Operation repeated.

14. Has passed a few small fragments.

17. Still passing calculous matter. Let him have gin to-day.

19. Operation repeated.

23. Has voided some large fragments.

30. Has voided one large fragment.

31. Has voided two small pieces.

Nov. 1. Has no pain, and says he has no sensation as if he had anything more to pass.

3. Has a feeling of something in the bladder to-day.

4. Has passed two small pieces.

6. Lithotrite used, and two small fragments crushed.

7. Has passed several pieces.

8. No pain in urinating; was sounded, but nothing could be detected in the bladder.

9. Discharged cured.

Case II.—William Forsyth, æt. 45, was admitted December 3, 1838, with stone in the bladder. It appears, on examination, that he has been labouring under the usual symptoms of stone for eight months. Health good.

6. The operation of lithotrity was performed in the same manner as in the former case.

7. Has passed a quantity of sand and two small fragments. To have two drachms of castor oil.

8. The oil has operated well.

9. Has passed a few small fragments of the stone.

12. Has not voided any detritus for three days.

13. Operation repeated.

14. Has passed a good many fragments.

15. Has passed three small pieces. Says he has now very little pain.

17. Has not voided any calculous fragments since the 15th.

18. No pain.

19. Bowels confined. Repeat the castor oil.

20. Bowels have been well opened. Operation repeated.

21. Has passed a number of fragments.

22. Has passed a few more.

25. Has passed two small pieces.

27. Operation repeated.

28. Has passed a quantity of sand.

29. Still passing sand.

31. Has passed three small pieces.

Jan. 1, 1839. Has voided two small fragments.

2. No pain in urinating.

4. Has passed some sand.

8. Voids his urine without pain, and has passed no calculous matter for several days.

15. Continues to void his urine without pain. He was sounded to-day, but nothing could be detected in his bladder.

21. Continues well. Ordered to be discharged.

On one occasion only, after employing the lithotrite, did I use the catheter-scoop in order to expedite the expulsion of the detritus from the bladder; and in withdrawing it, after injecting several fills of the syringe of tepid water, I inadvertently overlooked the collapsed state of the bladder. The consequence was, that a fold of the bladder had fallen into the mouth of the instrument, and occasioned very great resistance to its being withdrawn. A small portion of the mucous lining of the bladder came along with it. At the time I thought it was a fragment of the calculus which had stuck in the instrument, otherwise I would not have exerted the force that I did; but would have injected water into the bladder, which, I think, would have disengaged the entangled fold of bladder very readily. This inadvertency might have been followed by a very serious result, but most fortunately nothing untoward happened beyond the momentary pain, occasioned by withdrawing the instrument. From this occurrence it is evident that the catheter-scoop ought never to be shut in an empty bladder. Always before withdrawing it, the bladder ought to contain several ounces of fluid.

The operation of lithotrity, so far as the surgeon is concerned, is simple, and easily performed; requiring care only in the management of the instruments; and, when the stone is not large, and the bladder in a healthy state, I know of no reason why it should not be preferred to lithotomy. When the stone is very large, as in the following case, in which I tried it, or when there is any degree of chronic inflammation of the bladder, or great irritability from any cause, lithotrity is inadmissible.

LITHOTOMY.

Case I.—James Farquharson, æt. 24, was admitted December 15, 1838, complaining of all the usual symptoms of stone in the bladder. He has been ill for 18 months. On the introduction of the sound, a calculus, evidently of considerable size, was detected. The patient being anxious to have it crushed, and the urethra being small, steel bougies were ordered to be introduced from time to time, to dilate the urethra, in order to admit the lithotrite.

30. A sufficient quantity of tepid water being first injected, the lithotrite was introduced, and the stone readily laid hold of, but no force, that could with any safety be used, made the least impression upon it. The attempt was therefore abandoned.

Jan. 8, 1839. The bladder, for several days after the attempt to break the stone, was excessively irritable. The lateral operation was this day performed. The incisions were made with Liston's knife. A large stone was removed, which weighed 3½ oz. and 2 scruples; it was eight inches in its largest circumference, and six in its smallest. A tube was introduced into the bladder through the wound, and to be retained for 48 hours.

9. Slept at intervals during the night; pulse 100; tongue dry; complains of thirst; abundance of urine passing through the tube. Let him have diluents at pleasure.

10. Slept a little during the night; pulse 114; complains of some pain in the lower part of abdomen.

℞ *Calomel*, gr. iss.;
Opium, gr. j; every sixth hour.

11. Slept a good deal during the night, and feels easier. To have the calomel and opium night and morning, and an ounce of castor oil to-morrow.

12. The castor oil has operated well; he says he is free from pain; pulse 86. Omit the calomel and opium.

19. Sleeps well; pulse natural; has passed a few drops of urine by the urethra.

25. Has passed some urine in a stream, two or three times daily, since last report, and to-day about a third of the whole.

30. Has passed no urine by the urethra since the 25th, but is not complaining much.

Feb. 9. Has passed a small quantity of urine by the urethra to-day. He requires castor oil from time to time to move his bowels, and generally an opiate at night.

21. Some days since last report has passed small quantities of urine by the urethra, and other days none; a catheter was passed into the bladder to-day, and two hours afterwards he passed a good deal of urine.

March 5. Has not passed any urine by the urethra for the last two days.

8. Has voided a small quantity of urine, but complains much of pain in the hypogastric region. To have,

Calomel, gr. ij;
Opium, gr. iss; at night.

9. Repeat the calomel and opium.

11. About a table spoonful of pus was

discharged from the wound; less pain; pulse 100.

12. Passes about half of his urine by the urethra.

17. Complains of pain in right iliac region. Continue the calomel and opium.

18. Pain somewhat easier; he makes the greater part of his urine through the urethra.

19. Complains of very acute pain in the hypogastric region. Very hot fomentations to be applied immediately, and to have the calomel and opium at night.

20. Less pain.

23. Passes the greater part of his urine by the urethra; there is still some pus discharged from the wound.

31. He makes all, or nearly all, his urine by the urethra; a very small quantity only is lost through the wound, or rather what may now be called a small fistulous aperture.

13. There is still, when he voids his urine, a small quantity lost through the fistulous opening; he is anxious to return home, and is therefore ordered to be discharged.

The recovery of this patient was remarkably tedious, and when the size of the stone is taken into consideration, this is not to be wondered at, for the neck of the bladder must have been very much stretched in extracting a stone so large. It was, no doubt, in a great measure owing to this cause that the inflammation, during the reparative process, took place in the tissue surrounding the neck of the bladder, which terminated in abscess.

The next case detailed was operated on a short time before the commencement of the period to which I have confined this report; but I shall give it here, as it furnishes a good example of fair recovery from the operation, when the stone was also very large.

Case II.—William Priest, æt. 54, was admitted June 28, 1838. He has laboured under symptoms of stone for five years. On passing the sound into the bladder a calculus was distinctly felt. Health tolerably good. Let him have a dose or two of castor oil preparatory to being cut.

July 3. The lateral operation was performed to-day, and a lithic acid calculus removed, which weighed 2 oz. and 1 drachm; it was 6½ inches in one circumference, and 4½ in the other.

4. Has slept several hours; no abdominal pain.

5. Complains of pain of bowels, and along the urethra.

℞ *Sed. liq. of opium*, M. xxx;
Nitrous spirit of ether, M. xxx;
Water, ℥j. Make a draught, to be taken immediately.

The abdomen to be fomented with a decoction of chamomile flowers.

6. Less pain of bowels. To have castor oil ℥j.

7. Castor oil has operated well. Repeat the draught, as before.

11. Free from pain; passes his urine partly by the urethra.

18. No urine by the urethra since yesterday; he retains it about two hours and a half, and then it comes through the wound.

21. Passed urine by the urethra three different times; some pus is deposited from the urine.

Aug. 3. Urine is found to be alkaline.

℞ *Muriatic acid*, M. v;
Water, ℥j. Make a draught, to be taken three times a day.

4. No deposition of pus.

6. Complains of griping pain in his bowels. Omit the muriatic acid.

9. Urine still alkaline.

℞ *Nitric acid*, M. lx;
Syr. of oranges, ℥ss;
Water, ℥vss. Mix; take one spoonful three times a day.

15. Passes the greater part of his urine by the urethra; improving in health. Omit the mixture.

20. Passes all his urine by the urethra.

26. Discharged cured.

Case III.—George Spence, æt. 65, very corpulent and muscular, was admitted July 20, 1839, complaining of the usual symptoms of stone. On being sounded, a calculus was readily felt.

23. He was again sounded with great care, and it was thought that the stone was too large for the lithotrite. The lateral operation was therefore decided on; but, in the first place, he was ordered to have his bowels well purged.

27. The lateral operation was performed to-day, and a lithic acid calculus extracted, about 4½ inches in circumference.

28. Has slept about an hour and a half, and feels quite easy.

29. Doing well.

30. Has voided about ten ounces of urine by the urethra.

31. Ordered an ounce of castor oil.

Aug. 1. Oil has operated well.

4. Passes about half of his urine by the urethra.

7. Passes all his urine by the urethra.

10. Going on well; has been out in the garden.

17. Discharged cured.

There could scarcely be a better example of recovery from the lateral operation than that of this patient.

Case IV.—Death. Alexander M'Lachlan, æt. 68, was admitted August 2, 1839, with the usual symptoms of stone, of which he had complained for nearly two years. He was sounded, and a calculus of ordinary size felt. The urethra being small, bougies

were ordered to be introduced every third or fourth day, to dilate it, so as to admit the lithotrite.

The usual quantity of tepid water being injected, the lithotrite was introduced, but the water instantly escaped by the side of the instrument, and as the same thing happened after injecting the bladder again, the lithotrite was necessarily given up.

31. The lateral operation was performed to-day, the rectum having been emptied by an enema in the morning, and the bowels well acted on yesterday by castor oil; on introducing the finger into the bladder, after making the incision through the prostate, a very extraordinary enlargement was felt on each side, particularly on the left; the stone was with difficulty reached by the finger; it was easily laid hold of by the forceps, but very great difficulty was experienced in extracting it, although it was not large, and it broke under the forceps; it was removed in pieces.

Sept. 1. Slept four hours; pulse regular; plenty of urine passing from the tube.

2. Complains of sickness; very little pain in the region of the bladder; pulse accelerated and feeble. Let him have gin and water in small quantities, or brandy, if he should prefer it; beef-tea, or any other kind of nourishment that he can take.

3. Still complains of sickness, and it is now accompanied with pain of his chest, and oppressed breathing; complains also of pain in his right groin; to be fomented.

4. Passed a very restless night; oppression of his breathing became more and more urgent; pulse became irregular, and he died at half past eight o'clock A.M.

Twelve hours after death the body was examined by Mr. James Ross, the house-surgeon. On opening the abdomen, and introducing the hand into the pelvis, Mr. Ross was very much struck with two tumours which he felt behind the symphysis pubis, shutting up in some degree the outlet of the pelvis. On removing the bladder and its appendages, the tumours were found to be the lateral lobes of the prostate very much enlarged, encompassing the neck of the bladder anteriorly. On making an incision into them, the centre of each was found to be soft, and of a dark grey colour. The middle lobe was not in the least enlarged. There was no appearance of inflammation of the peritoneum, nor infiltration of urine.

The post mortem examination explains satisfactorily the difficulty experienced in extracting the stone, and, I think, the cause of death. These enlarged lobes of the prostate must have been seriously bruised by the extraction of the stone, and it is evident that at the time they were fast degenerating into a state that must soon have produced such constitutional disturbance as not to be long compatible with life.

Case V.—Death. James Thomas, æt. 59, was admitted August 8, 1839, complaining in a very aggravated degree of all the symptoms of stone in the bladder. He appears to be very infirm, and in a bad state of general health; pulse quick, tongue very white, and there is a feeling of feverish heat in his skin. He had been in the hospital in July, 1838, complaining of the same symptoms in a less degree, and had been sounded several times without any calculus having been found; he was treated at that time for chronic inflammation of the bladder, and, after being a month in the house, was discharged free from pain; he continued well for four months, when the pain in voiding urine returned, and has ever since continued most severe.

9. On being sounded, a large calculus was found lying at the neck of the bladder; he is most urgent to be operated on at all hazards. In the first place, he was ordered to have some mild laxatives occasionally; opiates at night, and alkaline medicines, with plenty of diluents.

24. There is no improvement in his general health; his appeals are so urgent to be relieved, that the lateral operation was performed to-day; the stone was so fragile, that it went to pieces immediately on being laid hold of by the forceps, and was removed partly by this instrument, and partly by the scoop; an attempt was made to wash out the bladder with tepid water, but it was given up, as the pain was so excruciating on the smallest quantity being injected.

25. Slept well during the night; pulse 96; no pain; there is a sufficient quantity of urine passing from the tube.

26. Has had a good night; tube removed.

27. Feels quite easy.

28. No complaint.

Castor oil, ℥ss.

29. Castor oil has operated well; a silver catheter was introduced, and some tepid water injected; nothing was felt; the catheter was stained black.

30. Has voided some urine by the urethra.

31. Has voided about half of his urine by the urethra, but feels pain at the time.

Sept. 1. Has a good deal of pain when he voids his urine; appears feeble. Let him have 4 oz. of wine.

2. No change.

3. In the same state.

4. Bowels confined.

Comp. infus. of sennæ, ℥ij.

5. The infusion of senna operated well; no improvement. To have an opiate at night.

6. Pulse very feeble; still complains of pain when voiding urine by the urethra. Continue the wine; he gets also gin when he wishes it, and anything besides that he can take.

7. He is getting weaker daily.

9. Died this morning.

An inspection of the bladder was obtained. The mucous membrane was very dark, and ulcerated points in many parts were observed. The fundus was almost in a state of sphacelus. I did not think this patient in a condition suitable for the operation, but he was so importunate to have it done, that I was obliged to agree. At the time of the operation, there can be no doubt, I think, but there was ulceration of the bladder, although I confess I was not then aware of it, else I would not have operated. There was a considerable thick white deposit in the urine, but I did not think it purulent. The calculus appeared to consist principally of the triple phosphate, and had been rapidly formed; but the mucous membrane of the bladder, previous to its formation, had been seriously affected with chronic inflammation.

EXCURVATION OF THE SPINE, WITH COMPLETE PARALYSIS OF THE LOWER EXTREMITIES.

Anne Farquhar, æt. 23, was admitted in September, 1838, with excurvation of the spine, high up between the scapulæ. The ribs have fallen in very much on each side. She has had pain in her back for three years, and complete paralysis, for three months, of the lower extremities. The nerves of sensation in the limbs are not affected; there is no febrile disturbance; appetite is good, and the functions of the alimentary canal are carried on in a tolerably healthy manner. There is no tenderness in any portion of the spinal column, and the curvature appears to be occasioned more by softening of the bones than by any other cause. Immediately on admission she was seized with retention of urine, and required the catheter for two days. She is ordered to be placed daily on her back, on a firm mattress, in bed, and to have the spine put upon the stretch as long as she can bear it. The mode of proceeding is as follows:—A soft girth is put round the body under the axillæ, and fixed to the frame of the bed; another is put round the pelvis, to which pulleys are attached, and a considerable extension is then kept up. The spine is to be powerfully rubbed with camphorated oil, night and morning; and she is to take strychnine in the following formula:—

℞ *Diluted acetic acid*, ʒij;
Strychnine, grs. ij.

Jan. 16, 1839. The extension has been used almost daily since her admission; at first she could bear it only half an hour, and now about an hour and a half to two hours. She has taken of the solution of strychnine, in acetic acid, from six to twelve drops three times a-day; it was occasionally omitted when it produced head-ache; the frictions have been constantly attended to; she has now some use of her limbs, and can walk a few steps holding on by any object; she has a good deal of muscular startings in her limbs. Let the extension be continued, and also the frictions. Omit the solution of strychnine. To have

Tincture of lytta, xv drops, three times a-day, and increase the doses until dysury is felt.

July 15. The extension has been regularly gone on with; the ribs are certainly more prominent, and the excurvation considerably less; she has continued the tincture of lytta, and taken as much as sixty drops from an ounce phial three times a-day; it occasionally produces dysuria, and then it is omitted for a time; she can walk a little without assistance. Continue the medicines.

Aug. 31. She has now complete control over her lower extremities, and can walk a mile without a feeling of fatigue; she is to remain for a short time yet in the hospital, and then to be discharged, with directions to wear steel stays.

The result of this case is most satisfactory. Of the benefit derived from the extension there cannot be a doubt; the excurvation becoming less, and the ribs more prominent, are effects to be ascribed solely to its agency. In paralytic affections, when stimulants are indicated, I believe the tincture of cantharides acts more powerfully than the strychnine, and it appeared to do so in this instance.

VASCULAR TUMOUR ON THE PARIETES OF THE ABDOMEN.

Christina Forbes, a widow, æt. 41, was admitted September 1, 1838, with a tumour on the left side of the abdomen, between the umbilicus and the crista of the ilium, which she thinks took its rise from a blow received there eight months before. It is now about four inches in length, and two in breadth, with a large base. It is not very moveable, but is not sunk into the muscles. There is a considerable ulcer at one point, from which there have been occasionally profuse bleedings, and the discharge at all times is bloody. The skin over the upper part of it is of a dark venous hue; it is unattended with pain. As the patient was unwilling to submit to excision, the chloride of zinc was applied to a portion of it in the form of a paste, with an equal quantity of flour, and, although the pain which it caused was severe, was retained for twelve hours. In a few days a slough of considerable depth was thrown off. She was ordered comp. decoc. of sarsaparilla, with liquor of potass, and four grains of Plummer's pill, every night. The chloride of zinc paste to be applied from time to time.

Dec. 2. The escharotic has been applied eleven times, and always followed by the separation of large sloughs. At the time of

the slough coming away, there is a good deal of oozing of blood. The application of the escharotic is attended by most overpowering pain, which large opiates have no effect in soothing. The size of the tumour is much diminished, and the surface of the sore is secreting pus. The Plummer's pill is continued, but not the decoction of sarsaparilla, as it disagreed with her stomach.

17. The sore is assuming an unhealthy aspect, and there is a tendency to fungous growth; the base of the tumour is greatly enlarged. Let the escharotic be again applied.

Jan. 1, 1832. The tumour has increased, and is now as large as on admission; the sore bleeds on the slightest touch. The pain which she suffers from the escharotic is so great that she is now willing to have the tumour removed by the knife.

12. The tumour was dissected out to-day, and the edges of the wound brought together in the usual manner. Two vessels only required ligatures, and adhesion took place by the first intention.

She was discharged cured on the 31st of January.

I have reported this case to show that the application of the chloride of zinc is accompanied by pain so intolerable, which even large opiates have no power to lull; and also to show that, notwithstanding the manner in which it has of late been extolled, its efficacy as an escharotic is not so great.

COMPOUND AND COMMINUTED FRACTURE OF ONE LEG, AND SIMPLE FRACTURE OF THE OTHER.

Margaret Mackenzie, æt. 17, was admitted September 18th, 1838, with compound and comminuted fracture of the right leg, about four inches below the tuberosity of the tibia, and simple fracture of the other, about the middle. The bones of the right leg were actually pounded, and the limb lying in a bundle. The accident had happened about six hours before admission, by a fall from a cart. There had been profuse hæmorrhage; at present there is a good deal of collapse, and the patient feels cold.

Both legs were extended, and placed on Liston's splints. Some wine was given to the patient, and every other means had recourse to for the purpose of restoring the natural temperature of the body.

19. Appears to be considerably revived; slight oozing only from the wound.

20. No febrile disturbance.

23. Doing well.

25. Pulse feeble.

To have four ounces of *port wine*;
Sulphate of quinine, gr. ij.; three times a day.

29. Wound is granulating.

Oct. 1. Two small fragments of bone thrown off.

9. Wound looks healthy.

12. Some fluid effused around the compound fracture.

14. Going on well.

26. Not so much effused fluid; general health good.

Nov. 9. Another comminuted portion of bone thrown off.

12. The effused fluid is absorbed.

Dec. 12. The wound is healed.

She was discharged cured on the 22nd, when she was able to walk a little.

This was an extremely bad compound fracture, and in a metropolitan hospital, an attempt to save the limb, I am of opinion, would have been fruitless; but in the country, if the patient is in the enjoyment of good health at the time of the accident, the case must be very bad indeed if amputation cannot be dispensed with.

WOUND OF THE POSTERIOR TIBIAL ARTERY.

Jane Duffus, æt. 56, was admitted Oct. 11, 1838, on account of a lacerated wound on the left ankle, near the malleolus internus, from the bite of a cat ten days before, which had laid open the posterior tibial artery. The hæmorrhage, at the time of meeting with the accident, was profuse, but was controlled with compresses and tight bandaging. It has burst out two or three times since, and the patient is now very feeble from the loss of blood. The moment that the pressure is removed, the wounded artery bleeds with great violence. The injured parts are much swollen, and have a boggy feel.

A free incision, from three to four inches in length, was made through the centre of the wound, and the extremities of the vessel secured by ligature.

12. She is very feeble. To have four ounces of port wine a day.

34. The ligatures have separated. Wound healed.

26. Discharged cured.

AMPUTATION BELOW THE KNEE.

Robert Calder, æt. 20, was admitted December 11, 1838, with diseased ankle joint.

18. The limb was removed below the knee, by the flap operation; very little blood was lost. The stump was dressed five hours after the operation, and the edges of the wound retained by sutures and the isinglass plaister.

19. Slept well; pulse 96.

20. Was restless during the first part of the night, but slept towards morning; bowels confined.

Castor oil, ʒ j.

21. Oil has operated well.

26. Ligatures have separated.
31. Stump whole.
Feb. 11. Discharged cured.

The only remark which I have to make in reference to this case is, that in amputating below the knee, care should always be taken not to operate so high as to divide the arteries of the leg close to their origin from the popliteal; because if these vessels be divided too close to their origin, clots, I suspect, do not form in them, and the never-failing consequence will be secondary hæmorrhage. In performing this operation a few years ago, I committed this blunder, by being off my guard, and yielding to the entreaty of the patient at the moment to make the stump short. In three days there was hæmorrhage from the stump; I opened it up, and secured all the vessels, for they all appeared to burst out at the same instant. In three days after the same thing happened again: I then tied the femoral artery in the upper third of the thigh, as it passes along the inner edge of the sartorius. This put a final stop to the hæmorrhage, and the patient made a good recovery.

LACERATED WOUND OF THE SCALP.

John Gallie, æt. 21, was admitted January 7, 1839, on account of the following injury:—While rashly attempting to stop a thrashing mill by seizing the bridle of one of the horses, he was dragged within the building, and his head fell between the end of the pole, to which the horse is attached, and the wall, a space of only four inches in breadth. The consequence was, that the integuments on the left side of the head, as well as the temporal muscle and its fascia, were much lacerated, and torn back to the occiput, leaving a large portion of the pericranium entirely exposed. The clavicle on the left side was dislocated at its sternal extremity. The dislocation was reduced; and the lacerated parts being replaced, were retained in opposition by a few stitches and a bandage. The stitches were removed on the tenth day; union by the first intention took place as speedily and perfectly as could be looked for in an incised wound of the same extent; and upon the 2nd of February he was discharged cured.

PIN LODGED IN THE EAR.

Margaret Duff, æt. 18, was admitted January 28, 1839. About a year ago while picking her ear with a pin, she inadvertently allowed the pin to slip into the ear. Till lately she has not suffered much inconvenience from the accident, but now the pain is very distressing, and she is most anxious to have it taken out.

The ear was minutely examined and re-examined by the aid of bright metallic tubes, to throw the light into the bottom of the meatus, but not a vestige of the pin could be seen. A small speck, to be sure, was seen, but it was doubtful whether it was not a glistening point of the membrana tympani; and, in this state of uncertainty, although an attempt was made to lay hold of it, the attempt was not persevered in. Fomentations, opiates, the occasional application of leeches, as circumstances might require, were the only means that could be thought of to allay the pain, as the removal of the pin appeared impracticable.

April 30. The ear has been examined from time to time since her admission, but it was only to-day that the head of the pin could be seen; it was laid hold of by a small forceps, but it came out without the body. The ear was then washed out with warm water, but it was impossible to get a view of the body of the pin. The pain of late is so intensely severe that the patient is almost constantly moaning and screaming out. She seldom sleeps, and opiates have little effect in procuring rest or even affording any relief, although she takes to the extent of two drachms of the sedative liquor in the course of the day. For the last few days she has voided no urine without the catheter.

May 28. The pin made its appearance at the external ear to-day, and was removed; she now feels quite relieved from pain. She required the catheter till yesterday.

It is evident that the pin had penetrated the membrana tympani, and had advanced as far as its head would permit. I think the head must have fallen off from the body, and been lying at the bottom of the meatus when I laid hold of it with the forceps. It is remarkable that the long-continued and intense irritation which it kept up did not occasion suppuration in the ear.

ADIPOSE TUMOUR AT THE ANGLE OF THE JAW.

Isabella Webster, æt. 46, was admitted Feb. 5th, 1839, with a tumour situated at the angle of the lower maxilla, and extending over the parotid gland.

8. The tumour was removed; it was bound down by a very strong fascia and enclosed in a delicate cyst; the edges of the wound were brought together and retained by stitches.

9. Complains of pain in the wound; there is very great tension of the side of the face, and some discharge from the wound. The stitches were taken out. Apply an emollient cataplasm, and to have in the morning

Calomel, gr. v.;
Jalap, ℈j.

14. The swelling is greatly fallen. There is a collection of saliva, which escapes on pressure at one of the punctures made by the needle.

15. The wound is completely united, with the exception of the small opening where the saliva escapes.

18. The saliva is still escaping in large quantities. Apply a compress and bandage.

23. Saliva collects in a cyst and escapes from the fistulous opening on pressure.

Discharged, with directions to keep a compress tightly applied. In fourteen days she returned, when the salivary fistula was closed.

This case is interesting, inasmuch as it shows that a fistula of the parotid duct, succeeding to an operation, will do well by keeping up for some time firm pressure on the part. I have seen, on a former occasion, a fistula of the same kind after a wound of the parotid duct, and of considerable standing, do well by the same means.

VARICOSE ULCERS.—NITRATE OF SILVER.— SUPPURATIVE PHLEBITIS OF THE VENA SAPHENA.

John Ross, æt. 42, was admitted March 13th, 1839, with two ulcers on one of his legs, a little above the malleolus internus; they are not large, but at present are rather irritable; the veins of the leg are varicose, and the vena saphena is in the same condition, nearly as high as the groin. He has no other complaint, although he appears to be rather of a weakly constitution. To be confined to bed, and to have an emollient cataplasm applied to the ulcers. A dose of the house aperient medicine to-morrow morning.

16. There is a blush of inflammation around the ulcers, and the leg is greatly swollen.

17. The leg is more swelled; the varicose veins are very red, tense, and painful; the vena saphena is hard, like a cord, and intensely red nearly to the groin; pulse is very rapid; tongue is dry and brown. To take

Calomel, gr. ij.;
Opium, gr. i., night and morning.

Let the whole limb be occasionally fomented with a decoction of poppy heads, and continue the emollient cataplasm.

19. The veins are exceedingly tense and painful. All the symptoms of great constitutional irritation are present.

Continue remedies.

20. No mitigation of the symptoms. There is evidently matter forming in the saphena, as it passes over the side of the tuberosity of the tibia, and also a few inches lower down.

22. High fever; the same inflammatory action going on in the veins of the leg.

℞ *Liquor of the acetate of ammonia*, ℥ij;
Nitrous spirit of ether, ℥ij.;
Syrup, ℥ss.;
Camphor mixture. ℥iijss. Mix.

Take a table spoonful every second hour.

To-morrow morning, *comp. infusion of senna*, with *Epsom salts*.

23. Leg not quite so much swelled. The abscesses in the saphena are making rapid progress. Fever assuming a typhoid character. To have 4 ozs. of *port* wine, daily.

24. Mouth sore from the calomel; leg less painful. Omit the calomel and opium.

26. Continues rather better in every respect.

27. Abscesses were opened.

28. Leg much less painful; fever abating.

30. Very weak. Eight ounces of *port wine* a day.

April 1. Improving, but always restless during the night.

℞ *Sed. liquor of opium*; Mxx.;
Water, ℥j. Make a draught.

2. Improving. Omit the mixture. Continue the draught.

4. Very little pain of leg. Two grains of *sulphate of quinine* three times a day.

11. The ulcers are healed, as well as the sores from the abscesses. Complains only of stiffness of the leg.

16. Going on well. Omit the wine. Continue the sulphate of quinine.

25. There is not the slightest enlargement of any of the veins of the leg. The sides of the saphena, where the abscesses were, appear to be agglutinated.

The peculiarity of this case, is the excitation of acute phlebitis in the veins of the leg and extending along the saphena, from a very gentle application of the nitrate of silver to the ulcers on the leg. A very contrary effect from that produced was to be expected, for rubbing over the surface of ulcers slightly with lunar caustic for the most part diminishes their irritability, in place of exciting such fearful inflammation as it did in this instance.

THE TREATMENT OF DISEASES

AS CONNECTED WITH A

RHEUMATIC CONDITION OF THE SYSTEM,

ESPECIALLY OF RHEUMATIC IRITIS AND RHEUMATIC BRONCHITIS.

To the Editor of THE LANCET.

SIR:—In a letter which you did me the honour to insert in No. 748 of THE LANCET, on the deleterious effects of mercury as administered for the cure of presumed disease of the liver, I incidentally remarked that many diseases have a general relation, and require a corresponding, though modified treatment, as depending on a rheumatic condition of the system. There are two diseases extremely prevalent at the present time, which, both in their nature and their remedial character, are remarkably confirmatory of the correctness of the principle and efficacy of the practice, viz., rheumatic iritis, and, as I have ventured to denominate it, rheumatic bronchitis; each termed rheu-

matic as connected with a rheumatic condition of the system. I shall feel much obliged if you will allow me to avail myself of the favourable opportunity of publishing, in your esteemed periodical, a few observations on the appropriate treatment of such diseases as are associated with a rheumatic condition.

A rheumatic condition of the system may be suspected to exist during disease, in those individuals who probably inherit the predisposition, and in those particularly whose cheeks are marked and streaked with red and injected capillary vessels, looking like a cluster of small blood-worms beneath the cuticle, more or less minute, becoming more visible with advancing age; the individual on whose countenance these injected vessels are perceptible in early infancy, is doomed to suffer much from disease, unless the utmost attention be given to diet and general management.

A rheumatic condition of the system may be known to exist when the urine exhibits certain morbid changes, becoming deeply reddened and depositing a red sediment, and when the tongue presents a peculiar appearance as if sprinkled over with finely levigated chalk, especially towards the apex and margins, thickening into a substance of varying density and colour in different subjects towards the base. Where the chalky-looking particles are thinly scattered, they appear on close inspection, to be perfectly globular, (this appearance is lost when intense visceral inflammation supervenes). In rheumatic subjects, a zone of vessels, of light pink colour, surrounding the cornea, is often discernible, especially during the prevalence of northerly and easterly winds, appearing and disappearing within a few hours, causing no inconvenience, and chiefly important as a diagnostic sign.

The peculiar morbid action resulting from a rheumatic condition of the system, vaguely termed inflammation, may exist in any of the textures or tissues of the body, but most frequently in the muscular, mucous, or fibrous tissues; cæteris paribus it will be determined to those organs or systems which have suffered from previous irritation; when the muscular system is affected, that set of muscles will be attacked which has been most wearied: the man who breathes an irritating atmosphere, especially if he breathe rapidly and laboriously, as when hard at work, will suffer from rheumatic bronchitis. The intemperate man or he who is continually stimulating his intestines with purgatives, will suffer from rheumatic inflammation of the lining of the digestive canal, or from rheumatic inflammation of the kidney and mucous lining of the bladder, while he who has been long perplexed with thought or tortured by anxiety, will have rheumatic inflammation of the heart or brain.

A rheumatic affection of the extensor muscles of the neck in infants is not an uncommon occurrence; the head is forcibly drawn back, and the child screams on the slightest movement; this disease is often considered and treated as water in the head; an erroneous diagnosis may prove fatal; the expression of the countenance is at once distinctive.

A vast number of diseases, generally of trivial consequence, become intractable when associated with a rheumatic condition; a slight bruise or sprain will render the injured part subject to continual inflammation, which, by its degree, affords a criterion of the state of the constitution; a trifling surgical operation will induce the most fearful, sometimes fatal consequences. Let the young aspirant after surgical honours, who is greedily looking out for a subject on whom to flesh his maiden knife, be careful to select one for his first attempt who has a clean, moist, moderately florid tongue; whose urine is neither red nor turbid, but much resembling pale sherry in appearance. Diseases which originate in a rheumatic condition, are often treated by stimulants, which, though they relieve for the present, ultimately aggravate the disease by affording new elements of morbid chemical combination. Spasmodic affections may be cited as illustrations.

A rheumatic condition may probably be attributable to a disturbed state of the powers which regulate secretion and absorption, acting upon fluids dangerously charged with highly azotised matter, forming urea, &c.; it is a chemical change and should be treated on chemical principles, and by chemical correctives; an electric change in the atmosphere, a sudden mental emotion, a slight corporeal injury, will instantaneously disturb the healthful action of the regulating instruments of life (the nerves?) already tried to the utmost to arrange, retain, secure, or excrete the elementary atoms of organic combination, incessantly crowding upon them from an overloaden stomach, and severe or fatal rheumatic inflammation may at once be established; the gormandiser and drunkard are like blind men revelling on the brink of a precipice.

Whenever a rheumatic condition is discernible, the attendant disease of whatsoever organ or by whatever name it may be distinguished, should be treated by those remedies which experience has proved to be most beneficial in cases of ordinary rheumatism. In all cases of acute rheumatic inflammation, the diet must be strictly regulated; beer, wine and spirits, must be rigidly abstained from; animal food must be entirely prohibited; milk, beef-tea, butter, eggs, fish, &c. &c., are all pernicious: the decline of the disease is marked by the gradually decreasing sediment from the urine, and the gradual disappearance of the morbid

coating from the tongue; both are remarkably increased by a few tea-spoonfuls of milk or beef-tea.

I attended a man suffering from intense rheumatic bronchitis with general anasarca; he was rapidly recovering, when a kind officious friend procured him an admission into an hospital; no food was allowed him by the hospital physician but bread and milk; every spoonful that was swallowed was rejected by the stomach; in vain he expressed his dislike of the oppressive diet; the physician had ordered it and there was no appeal. The poor fellow's breathing became rapidly oppressed; the urine again deposited the abundant sediment; in a few days the disease proved fatal. Many individuals are systematically poisoned by bread and milk.

Bleeding is often extremely injurious in the commencement of rheumatic disease; in rheumatic affections simulating disease of the contained and vital organs, the simulated inflammation is often rendered a reality by loss of blood; rheumatic inflammation of the abdominal muscles and cranial coverings, afford examples. When there is intense rheumatic pain of the head, a single bleeding will sometimes, almost immediately, induce delirium; judgment and ratiocination are efforts of the mind requiring a certain degree of power; that power is suddenly diminished, and delirium sometimes as suddenly induced by the abstracton of blood, especially in irritable and imaginative subjects; the dreams of the night become the delirium of the day, when judgment is subjugated, as in sleep. The degree of danger is far from being in a direct ratio to the degree of pain, nor is the relief of pain afforded by bleeding an irrefragable proof of its propriety; diminution of pain is sometimes the measure of exhaustion of vitality, and the patient is rapidly sinking while gratefully acknowledging the alleviation of his sufferings; the dropsical affections, ascites, hydrothorax, œdema of the legs; the aqueous state of the blood so common to elderly persons, especially to those of bulky figure, may often be referred to the frequent bleedings so often practised for frequent determinations of blood to the head, or for frequent attacks of inflammation, comprehending and conveniently termed inflammation of the chest; but even when the body is almost exhausted of the few red globules which barely distinguish the circulating fluid from water, still rheumatic action may be detected, though feebly developed, lurking in the system till the close of life; the inefficiency of bleeding, in cases of inveterate rheumatism, will be manifested by the attempt to cure such rheumatism by bleeding alone.

Mercury freely or frequently given, imparts a disposition to rheumatic disease from the slightest exciting cause, or when already present, renders it exceedingly intractable. Rheumatism of the intercostal muscles is continually mistaken for inflammation of the liver, or pleurisy, and irreparable mischief is occasioned by bleeding and mercury. When there is much excitement, a state of hyperæmia, and the functions of important organs are endangered, both mercury and bleeding may be requisite for the first two or three days; bleeding often facilitates the operation of specific remedies by subduing the energy of morbid action; remote danger must sometimes be incurred in avoiding those which are immediate.

In endeavouring to correct a rheumatic condition of the system, it is customary to administer (somewhat empirically) such medicines as accumulated experience has proved to be beneficial; colchicum, magnesia, soda, chalk (not often prescribed, but sometimes a highly useful adjunct), ammonia, &c., all these will be found more or less serviceable in cases of rheumatic iritis and bronchitis, but are seldom, especially in cases of rheumatic iritis, sufficiently energetic. There is yet another medicine recently recommended in cases of rheumatism, the *iodide of potassium*. This is indeed a most potent and a most invaluable remedy in many rheumatic affections, as specifically corrective of rheumatic action as mercury is of syphilitic. In cases of rheumatic iritis and bronchitis the iodide of potassium in conjunction with the liquor potassæ, often acts like a charm in arresting the progress of disease. In bronchitis, the addition of ipecacuanha will be found useful as an expectorant. When an attack of acute bronchitis supervenes upon long existing chronic inflammation of the bronchial lining, the effects of the iodide of potassium combined with the potash and ipecacuanha are sometimes, to quote the words of a sufferer, "quite miraculous." The diet in all cases should be strictly vegetable, chiefly farinaceous.

Acute rheumatic affections are generally co-existent with a sanguineous state of the system; when there is an anæmic state, as shown by the *leucotic* appearance of the patient, the sulphate of quinine and sulphate of iron, separately given, or in combination, are valuable auxiliaries; counter-irritation is in all cases expedient.

The iodide of potassium will be found supremely beneficial in controlling and subduing that peculiar action of the capillaries which is specially characterised by the effusion of coagulable lymph, an action distinct from common inflammation, as I observed many years since in THE LANCET of February 25, 1832, an opinion which perhaps will excite less ridicule than at that time, now that it is sanctioned by Dr. Macartney; in pericarditis, in rheumatic hypertrophy of the heart (sometimes a cause of epilepsy), or in rheumatic hypertrophy of other organs or

tissues, the iodide of potassium may be given internally and rubbed externally by inunction. The iodide of potassium and liq. potassæ rapidly afford relief in cases of acute gonorrhœa; when there is extreme suffering mercury may be freely given at the same time, for two or three days. Sir Astley Cooper, by his indignant yet just reprobation of the practice of systematically giving mercury for a long period, has blinded many medical men to its utility, when given for two or three days, merely on the principle of lessening intense inflammation. With cachectic subjects, to whom we may wish yet almost dread to administer mercury, the iodide of potassium is the safest constitutional guardian we can select, as we cautiously direct the influence of the dangerous mineral.

In cases of advanced tubercular disease of the lungs, with considerable deposition and even excavation occurring in young *leucotic* subjects, when the tongue has been pale, flabby, and indented, not as it usually is, intensely reddened, I have witnessed several remarkable recoveries (?) from taking the iodide of potassium in conjunction with quinine and iron; the diet in such cases consisting almost entirely of animal food; salt, which is eagerly desired, being freely allowed. It is probable that iodine (least obnoxious when given as the iodide of potassium) will be found the most constantly efficacious remedy in all diseases of mucous membranes of rheumatic character; in short, I will venture to predict, though apparently opposed to Sir Anthony Carlisle, that iodine will prove to be one of the few most valuable medicines ever discovered.

In prescribing iodine it will be prudent to forewarn the patient of its occasional immediate effects, which are sometimes severe frontal headache, pain of the eye-balls, profuse serous discharge from the nostrils, and œdema of the eye-lids. All these disagreeable and sometimes distressing consequences disappear in a few hours, and may be considered rather as favourable than unfavourable indications.—I am, Sir, your obedient servant,

45, Finsbury-square, Nov. 4, 1839. HENRY REES.

PHYSIOLOGY OF THE NERVOUS SYSTEM.

To the Editor of THE LANCET.

SIR:—I am very unwilling to occupy your pages with any matter concerning myself, as an individual; and I had much rather discuss the merit of opinions on their scientific basis, than take up the time and space, which might be thus more advantageously employed, in replying to criticisms affecting my personal character. But if you admit the attack, you cannot, in fairness, refuse the defence.

I should have immediately replied to Dr. Lynch's observations, had THE LANCET of November 2, sooner come into my hands; but, being absent from home, I did not see it until some time after its publication. Dr. L. does me the honour to notice a paper of mine which I thought had been long forgotten. It was my first "Essay on the Physiology of the Nervous System;" and its object was rather to lay down certain fundamental data, from which to start, than to prove any novel propositions. The chief point I endeavoured to establish was the essential difference between instinctive and voluntary actions; and, by analysing the processes which intervene between the excitement and the performance of both, to show the relation existing between them. The idea of the paper had occurred to my mind before the publication of the lecture in which Dr. M. Hall gave a general outline of his system; but in working out my views, I availed myself of it to show that the class of movements denominated by him *excito-motor*, may be properly included with others under the general appellation of *instinctive*, as distinguished from *voluntary*; an opinion which I still hold, and which I have subsequently developed much more fully. Now, it is quite true that in this Essay I availed myself of facts which had been already placed on record; and I apprehend that no physiologist would be wise in neglecting such. The real advance of science depends less upon the discovery of new facts, than upon the discovery of relations between those already known. Did Newton make any new discovery of phenomena when he connected, by one law, the motion of the moon round the earth, and the fall of an apple to the ground?

In classing a case with which I was furnished by my friend Dr. Madden, with those I quoted from Sir C. Bell and others, Dr. Lynch manifests an entire ignorance of the real bearings of the subject. No such case, proving thus unequivocally what experiments on animals can only render probable, that reflex action may take place without sensation, had *then* been published by Dr. M. Hall or any one else.

In the paper in question, as well as in my subsequent article in the *British and Foreign Medical Review* (April, 1838), I expressed the opinion that the structural distinctness of the *excito-motor* or *true spinal* system of nerves was *not proved*. I said nothing, however, against the possibility of such being the fact, but left the question open to be decided by additional evidence. Such evidence I think that I have obtained, by comparing the structure of the nervous system in the invertebrate animals, with the functions it performs; and I published it as soon as circumstances would permit.

Now, Dr. Lynch has spoken of this Essay in a manner which I cannot but deem quite unjustifiable. He tells you that he has only read the introduction and the general *resumé*; and then says that he cannot see that I have given any reason for my change of opinions. He tells you, also (without reading it), that the greater part of the Essay is taken from Leuret's work. The fact is, that I have not derived above half a dozen anatomical statements from that work, throughout the whole Essay; and that I differ greatly in my physiological explanation of them, which has, at least, the merit of originality. Dr. Lynch might have seen this by reference to the figures; *not one* of which is copied from M. Leuret's work, a few having been taken from sources common to both. Dr. Lynch has spoken of this Essay (without reading it) as a mere compilation. I will take the liberty of informing him that, had it been such, it would most assuredly *not* have gained a prize as a thesis; since there were many, out of the 119 amongst which the faculty had to choose, that were possessed of much superior claims, as compilations, on the score of industry in collecting materials, and judgment in arranging them.

I shall not offer any criticisms, at present, on the physiological portion of Dr. Lynch's paper. If he thinks it worth while, *when he has read* my Essay, to discuss it in a less depreciating spirit than that which characterises the communication to which I refer, I shall be happy to enter the lists with him.

I wish to state, in conclusion, that the slight notice of Dr. M. Hall's researches that I have taken in my thesis, for which I have been blamed, did not result from any want of appreciation of their value, but simply from the belief that my embracing opinions which I had previously opposed, and my contribution of new and independent testimony in their support, would be regarded as the highest compliment I could pay. Dr. M. Hall has never publicly retracted the epithets he used respecting me and others on a former occasion; and whatever private reason I might have for believing that he is willing to accept my co-operation in his labours, I do not consider myself *yet* called upon to make any more personal acknowledgement of his merits than I have done. It may be that *he* does not regard me as having contributed anything in support of his views, since, to his mind, they were already proved. But what is good evidence to one mind, is not always so to another; and I happen to know that more than one individual, on whose judgment I much rely, has been convinced by my arguments, who did not feel satisfied with Dr. Hall's. I am, Sir, your obedient servant,

W. B. CARPENTER.

SECONDARY SMALL-POX.

To the Editor of THE LANCET.

SIR:—Permit me to make a few observations on a correspondence which has appeared in some of your late numbers, between Dr. Marshall and your "CONSTANT READER," on the subject of the occurrence of small-pox after small-pox.

It strikes me that Dr. Marshall has not altogether caught the drift of your Constant Reader's objections; he seems to imagine that your Constant Reader doubts the fact of small-pox ever occurring a second time (a fact now too generally admitted to be doubted); whereas, I conceive, that he only doubts the *frequent* occurrence of such cases, especially in the large proportion mentioned by Dr. Marshall, and even with respect to those cases, he does not seem to doubt the accuracy of Dr. M.'s statement, so far as that gentleman's *knowledge* is concerned, but questions the accuracy of the authorities from which that knowledge was derived. Now, we all know how difficult it is to ascertain, with any degree of accuracy, either from the patient or his friends, whether he really has had small-pox or not. Nay, if he even shows scars, the evidence is by no means conclusive, for they may be produced by other exanthemata. I, therefore, think that the question raised by your "CONSTANT READER" was perfectly legitimate; and, although the testimony of the profession at large cannot upset that of Dr. Marshall, I think a large proportion of contrary evidence would greatly tend to the inference that Dr. Marshall may have been misinformed as to the history of the *first* occurrence of the disease, although, from personal observation, he may be quite certain of the nature of that attack which he considered the *second*.

Instead, therefore, of Dr. Marshall's adopting the somewhat irritable style which he did in his last letter, and throwing out hints of his antagonist's "limited reading," and shallow philosophy, would it not have been better to search for and adduce the evidence on which he grounded his opinion that the *ten* cases were really cases of small pox occurring twice? Then the evidence so adduced would at once have established the truth, either one way or the other, and the profession would have benefitted by his facts. As it is, he has neither strengthened his own case in the slightest degree (for he has only defended where he was not attacked), nor weakened the objections of his antagonist, but has left the medical public to decide a case of which, by his own showing, they are not sufficient judges.

I hope that Dr. Marshall will think again of this matter, and lay before the public the evidence he has *that the first exanthema-*

tous disease which the ten persons incurred was really small-pox; or if, upon re-inspection, he find that evidence unsatisfactory, let him candidly admit the possibility of his being in error with respect to some of the cases. Hoping this interesting subject will be fully investigated, I remain, your's faithfully,

AN OBSERVER.

London, Oct. 22, 1839.

SECONDARY SMALL-POX.

To the Editor of THE LANCET.

SIR:—Will you favour me with space in THE LANCET for the following extract of a letter from Mr. J. D. Jeffery, of Sidmouth, the author of "*An Essay on the Prevalence of Small-Pox, and the Evils of Innoculation, addressed to the Members of the Boards of Guardians?*" I may premise, that no acquaintance subsisted between the writer of that letter and myself, until I received it this moring, with a copy of his Essay.

"After a careful investigation of nearly 400 cases, occurring in this town and neighbourhood (Sidmouth), two years since, I came to the conclusion—1st. That secondary small-pox is much more frequent in its occurrence than formerly; and, 2dly, that it was very questionable if the innoculation for the small-pox was a greater preservative from the re-occurrence of that disease than was vaccination, whilst the comparative danger of the two was fearfully in favour of the former."

"With regard to the truth of your assertions respecting the occurrence of small-pox twice, which has been doubted, I can only say, that there were *three* well-authenticated cases in this place during the last epidemic, in one of which, a young man, æt. 21, it proved fatal. He was *deeply pitted* from the effects of the first attack. I have been informed by Mr. Hunter, an experienced practitioner at Budleigh Salterton, that he has seen the small-pox *four times* in the same individual."

To the kindness and liberality of Sir Wm. Burnett, the Physician-General of her Majesty's Navy, I am indebted for the knowledge of another case of unequivocal secondary small-pox: it is contained in a letter from Mr. Parkin, surgeon, Royal Marines, accompanying divisional answers to a set of questions proposed to the surgeons of the Marine Corps, relative to small-pox and vaccination in their force:—

"We have had two cases of death from small-pox, after the most satisfactory vaccination, according to external evidence, of some years' previous date; and one case of malignant *small-pox*, which ultimately proved fatal, in an individual, aged about 40, who had in early life been *innoculated*, and had the disease confluently, bearing the most unequivocal proofs thereof, *by a countenance more seamed and pitted than any I ever before saw*. He took the disease in this infirmary (Woolwich), by visiting, in conjunction with myself, some cases of variola of a bad kind; and at the period when the first fatal case of variola happened, after vaccination, and when another individual took the disease in the hospital, who had previously passed the vaccine disease by innoculation from the cow in milking.—H. PARKIN."

I hope soon to be in a condition to make public a complete statement of all the cases of small-pox which have occurred in the navy of this country, for the last 17 years. Some very curious facts will thus be brought to light, and, I think, when all the facts which the naval medical records supply are collected together, the collection will be found to supply other cases of a similar kind to those narrated above, and so to place beyond cavil or dispute the fact, as a fact indisputably true, that if vaccination does not in all cases protect from small-pox, neither does small-pox in all cases protect from itself.—I am, Sir, your humble servant,

W. BARRETT MARSHALL, R.N.

6, Cheyne's-row, Chelsea,
Oct. 25, 1839.

EXAMINERS IN MEDICINE, AND TEACHERS.

To the Editor of THE LANCET.

SIR:—I have felt much gratification in perusing the resolutions lately adopted by the Provincial Medical and Surgical Association. It appears that "a plan of general medical reform, in the shape of heads of a bill to be considered by the several committees, and subsequently proposed to the associations," is in the course of preparation. This, Sir, is going about business in a truly business-like way.

I trust the communication I am about to make, important alike both to the public and the profession, will induce you to give it an early insertion in the pages of THE LANCET, a journal which has been at all times the untiring and unflinching advocate of "a clear stage, fair play, and no favour."

We medical reformers in Ireland, have long felt the grievous effects of *a union of licensing and teaching in one and the same body*. I am aware that an eminent surgeon of this city has been in correspondence with the Secretary of the Provincial Medical Association, in reference to this subject, and that he, the secretary, is disposed to look upon the question as a matter for *detail*; while all the *true* friends of reform in this country are convinced that it is an *important leading principle*. The reasoning of my respected friend, Mr. Taggert, is so conclusive on this subject, that I will beg to

quote from his lecture introductory to the business of the Original Peter-street School of Medicine for this session.*

"From our experience of corporations generally, I consider it hopeless to expect self-reformation; they are actuated by such a spirit of selfishness and monopoly, they will never consent to sacrifice antiquated prejudices, and personal interests, for the common weal. The discordant elements which compose the various medical bodies, can never I fear be made to agree upon any system that will meet the wants of the profession and the public,—what, then, should be done?

"The government must be made to feel a "pressure from without," that will compel them to take up this most difficult subject, and legislate honestly, without listening to the whisperings of those who are interested in perpetuating monopolies. Let a college or faculty be established in England, Ireland, and Scotland, *to license the general practitioner*; let there be a high, but uniform standard of education, preliminary and professional; its members to have equal corporate privileges in every respect; and to practice such branch of the profession as they may think fit, with a power to dispense medicine to their own patients in a private laboratory, but not to compound the prescriptions of others; let the graduate for a diploma to practice generally, be tested rather by the extent of his acquirements than by the number of his certificates; and let there be no teachers upon its court of examiners. This new licensing body should not have an elementary school of medicine or surgery as a part of its machinery; neither the London or Edinburgh Colleges of Surgeons are encumbered with such an appendage; why, at the *present* day it should be deemed necessary here, I need not stop to inquire. I feel satisfied that a school in conjunction with a body granting a license to practice, is a fruitful source of many evils, and gives an unjust monopoly in teaching; if there were but *one College* to license in medicine and surgery, with a school as a part of its system, and teachers on its court of examiners, pupils would naturally flock there, and leave the private schools deserted. This would be an evil of great magnitude, not as regards the interest of the teachers in those schools, which is a secondary consideration, but the character of Dublin, as a medical school, must speedily deteriorate. It is the rivalry that exists among schools at present, which secures to the pupil the certainty of being taught with efficiency and regularity; should any circumstance arise to give a further undue monopoly in teaching to any college, it would prove "a heavy blow and great discouragement" to medical education.

That a union of licensing and teaching in the same body, is condemned by a large majority of those who are really anxious for a useful and practicable system of reform, I have every reason to think. I cannot express my opinion more forcibly upon this point than by quoting a passage from a petition to the late King, sent by the London College of Surgeons, when the London University was seeking for a charter to enable them to examine candidates and grant degrees in medicine, &c.; it is as follows:—

"'Your petitioners are firmly convinced that the occupation of teaching, and the power of examining and conferring degrees, ought to be exercised as they now are, by distinct institutions, and that the union in the one and the same institution of those discordant attributes must be attended with danger to the public welfare, on the numerous occasions in which the interest of the teacher and the duty of the examiner would interfere with each other.'

"Let us for a moment take another view of this important question, and admit the propriety of connecting a school with a proposed new College, our next object will then be to inquire what kind of school it should be? I think you will agree with me that in a great National Institution of Medicine, professorships, if established at all, should be in the highest departments of our profession; leaving the ordinary routine, teaching, to the competition of private schools: they should have their professorships of comparative anatomy, pathology, and experimental physiology; these, if properly illustrated, would tend much to advance medical science: in this way the splendid museum of a national body would be made truly available to the profession and the public, and not used merely as a show-shop to gratify the curiosity of the lounger."

Now, the object of the present communication is simply this, that, we reformers, in this country, shall be assured that, in the preparation of the proposed bill, two principles shall be distinctly and clearly guaranteed, viz.:—First, That teachers shall not be examiners for degrees. Secondly, That a union of licensing and of teaching shall not co-exist in the same body. If these pledges be given, the Association may calculate on enlisting heart and hand a host of medical teachers in the cause of reform. When I look to the list of medical men, in this country, that have been elected members of the council, I am disposed to think they will contend for the alliance of licensing and teaching in the proposed new College or Senate. An unholy union, which, from its practical results in this country, has proved to be harassing, vexatious, and oppressive; the baleful consequences of which have been so often and so ably reiterated by the

* Published by Fannin and Co., Dublin.

editor of THE LANCET. We make no unreasonable demands. We have a longing after peace and concord; but we will fearlessly and openly assert our right to be heard, and never bind our necks to the yoke of a galling monopoly.—I am, Sir, yours, &c.

GEORGE T. HAYDEN.

Harcourt-street, Nov. 2, 1839.

THE RARE RHIZOMORPHOUS PLANTS.

To the Editor of THE LANCET.

SIR:—A fine specimen of *rhizomorpha subterranea* was discovered a few weeks since at Hertford, and has been presented by Mr. R. R. Shillitoe, of University College, to Professor Lindley, as an addition to the Botanical Museum of that institution. It was found attached to the under surface of an oaken slab (forming part of the covering of an old well that had been closed for eleven years), by a stem about the thickness of a goose-quill, and upwards of three yards in length, the lower extremity of which, on reaching the surface of the water, branched out into innumerable ramifications, the whole presenting a matted appearance, and covering a space of at least a yard in diameter.

The entire plant, when fresh, was moist, emitted a fungoid odour, and was of a deep green hue externally, which, on exposure to the air, was soon converted into a dark brown; the interior of the stem is pale yellow, whilst that of the branches consisted of a white elastic substance. An occasional anastomosis occurs between the smaller ramifications, otherwise they terminate in blunted extremities, covered by an extension of the cortex. The general aspect of the plant (bearing, as it does, so strong a resemblance to that of a long root with its attached fibrillæ) is briefly, but most significantly described in the generic name applied by botanists to its congeners—it is, in reality, rhizomorphous.

In the smaller branches the white and elastic axis is composed entirely of filamentous cellular tissue, without any admixture of either spiral vessels or dotted ducts; the filaments themselves are extremely delicate, white, and transparent, somewhat waved in their general outline, and arranged, for the most part, in a direction parallel to each other, and to the axis of the branch itself; in the stem the ultimate filaments are of a dirty yellow colour, and are more irregularly disposed, being somewhat intermixed, interwoven with each other.

The integument of the branches presents a smooth, but dull aspect; it is brittle and inelastic, and consists of several layers of condensed parenchymatous tissue, of a dark brown colour; the cortex of the stem is thicker, drier, and is irregularly fissured, the clefts running more or less in a longitudinal direction; issuing from these dehiscences are numerous tufts (invisible to the naked eye) of bright fulvous filaments, apparently indicative of the situations in which rupture of the integument had occurred to admit of the emission of the sporules by which these plants are propagated.

It is not known whether this specimen possessed the luminous property usually displayed by the members of this genus rhizomorpha; no observations having been made to ascertain this point until seven days after it was discovered.

The extreme rarity of rhizomorphous plants in this country may be inferred from the fact, that in the Rev. J. M. Berkeley's continuation of Sir J. E. Smith's *British Flora* no mention whatever is made of this genus; whilst in Hooker's *British Flora Cryptogamea* some smaller *parasitic species* of the rhizomorphous plants are only incidentally alluded to as insinuating themselves beneath the bark of decaying willow-trees; many species, however, have been discovered on the Continent in mines, pits, hollow trees, and other moist situations, excluded from the light of day. In the mines of Bavaria they vegetate so luxuriantly, and manifest their luminous properties to such an extent, as to entwine themselves along the walls and pillars of these mines, extending several hundred feet in length, and shedding a soft but brilliant effulgence over those gloomy and dreary excavations.

I have, with the assistance of my kind friend, Mr. John Marshall, endeavoured to make an analysis of the plant, but the quantity we had to operate on was so small that it was very unsatisfactory; we expected to have found phosphorus, but did not succeed, probably from want of experience in such nice operations, and from the quantity being so small.

R. R. SHILLITOE.

26, Gower-place, London,
Nov. 1839.

BITE OF POISONOUS SNAKES.

To the Editor of THE LANCET.

SIR:—I am happy to find that your insertion of my letter to Mr. Corbyn has called forth the instructive communication of Dr. Knox, which apppeared in your last number; although, notwithstanding that gentleman's assurance of his desire to avoid all criticism, I feel it necessary to fill up an omission which, had the wish to criticise existed, would no doubt have afforded ample space for its indulgence. I mean the non-performance of the operation of excision. This operation was not only thought of, but proposed; yet so evident was the near approach of death to our patient, that

it was simultaneously, and at once, rejected by the skilful surgeon who then afforded his assistance, and myself, both conceiving that no benefit could possibly be expected to arise from its performance at so late a date.

As I, like Dr. Knox, can honestly disclaim all wish to enter the arena of criticism, he will perhaps have the courtesy, in his promised letter, to afford me answers to the two following queries:—

Has Dr. Knox ever seen a case of injury from the pseudo-boa?

Is the doctor positive as to the familiar knowledge possessed of *this* species in India?

Mr. Corbyn, whose reputation as a literary and scientific man stands high in India, did not know the snake from the description of it that he received; which, had it been frequently met with, he surely would have done.

The snake in question was, I know, preserved, and is, in all probability, by this time in England. I am, Sir, your obedient servant, J. G. Brighton.

Kniver, Nov. 5, 1839.

OVARIAN CYSTS.

To the Editor of The Lancet.

Sir:—In reply to Mr. Gorham's very elaborate and valuable observations on excision of ovarian cysts, in The Lancet of October 5th, I beg to state that I was perfectly sincere in claiming the more simple mode of operating in these cases, as the suggestion of my own mind, never having seen or heard of Dr. Hunter's paper on the subject. Indeed, I think that it is the deference which has been paid to the gigantic authority of John Hunter, more particularly to his theory of "Continuous Sympathy," which has kept abdominal surgery in comparative abeyance.

Since the publication of my last paper on this subject I have witnessed the extirpation of an ovarian cyst by my friend, Mr. Crisp, of Harleston, Norfolk, from the abdomen of a lady residing in that town, which had existed during more than 20 years, and for the relief of which she had twice submitted to tapping. It contained about three gallons of fluid, but had formed no adhesions to the surrounding viscera, nor to those points of the reflected portion of the peritoneum which had been punctured in the previous tappings. This lady perfectly recovered, and is still in good health.—I am, Sir, your's very respectfully,

W. Jeaffreson, Surgeon.

Framlingham, Nov. 2, 1839.

THE LANCET.

London, Saturday, November 16, 1839.

When the proprietors of the King's College found that their shares were every day declining in value, that the medical classes were at the lowest ebb, that the Professor had to address empty benches, and that hypocritical observances could no longer be substituted for scientific acquirements, they appealed to the public for subscriptions, and cast about to build an Hospital for the poor. They have partially succeeded in their object. A "King's College Hospital" is to be erected, certainly not in the healthiest locality of the metropolis. Mr. Arnott, in his printed lecture, traces Hospitals to the benignant fountain of Christianity, and strenuously advocates their extension in this country. We are quite ready to admit that the medical attendance upon our sick poor is inefficient; and that it is upon public charity, and the assistance of the wealthier classes, that they must always look for relief, as they cannot, by any exertions or sacrifices of their own, remunerate medical practitioners. But we cannot admit that the Hospital and dispensary system at present in operation, is calculated to meet the exigencies of the case. They are imperfect institutions at the best, and are, in every respect, very inadequate substitutes for attendance upon the sick poor at their own houses. Instead of sinking immense sums of money in building more Hospitals, would it not be better to improve the dwellings of the poor, and to provide them with the means of warmth, ventilation, and cleanliness, at home? Instead of placing them at the mercy of nurses and strangers, would it not be more humane to provide the wife with the means of watching over her children, or her sick husband? Instead of electing three or four officers to walk with great ceremony, or to hurry with indecent haste, through the wards upon one or two days in the week, would it not be

wiser to expend the funds of the medical charities in paying the neighbouring medical practitioners for assiduous attendance? We shall be prepared to answer these questions by and by; in the mean time, it is our deliberate opinion that the medical profession and the public would be better employed in placing the Hospitals which are already in existence, upon a satisfactory footing, than in founding new establishments infected with all the vices and imperfections of their predecessors.

It is true, as a general statement, and was remarked by Mr. Arnott, that the Greeks and Romans had no Hospitals of any kind. But Dr. Bouras, a Greek Physician, has rendered it probable, in a very able Treatise on Hospitals, that the *Cynosarges*, at Athens, was a Foundling Hospital (*Brephatrophia*); and that there was an institution of the same kind in Rome, by the *Columna Lactaria*.* To account for the absence of Hospitals, Dr. Bouras adduces the testimony of various ancient writers, to show that the moderate poverty of the people, the humanity of rich citizens and physicians, general hospitality, watchfulness on the part of governments, the mode of living, salubrious habitations, mildness of climate, and diseases (particularly those of a chronic character) less frequent than in the present day, enabled the Greeks and Romans to exist without Hospitals. He maintains, notwithstanding, that Hospitals are of essential advantage at all times; and his book is written to recommend their erection in Greece. The soundness of this recommendation is very doubtful, and it is not at all probable that diseases were ever less frequent, or less fatal, than in the present day; but it does not follow, because the Greeks and Romans had no Hospitals, that they had less humanity, or did less, with the means at their disposal, for the promotion of public health, than the founders of the institutions of the middle ages, in which the sick were lodged, but never treated medically. The Temples of Æsculapius were resorted to by all classes; and they were planned so judiciously, that little doubt can be entertained of their superiority over Hospitals, in many respects, if superiority be measured by the proportion of recoveries. The Greek Temples of Health were not placed, like the *Hotel Dieus*, the St. Bartholomews', the St. Thomases, or the London Hospitals, in the midst of a crowded, unhealthy city. They were built, as Plutarch remarks, out of the cities, upon high, isolated spots; in the suburbs of the town, as in Cos; in open plains, as that of Clitonis, in Arcadia; surrounded by gardens or sacred groves, which intercepted the insalubrious winds, and purified the air. In Elis, the Temple was upon Cape Hyrminia, surrounded by the most fertile and delightful lands of the Peloponnessus; the celebrated Temple of Epidaurus, near the sea, was overlooked by forest-crowned hills. Mineral waters, or rivers for baths, were near. Sometimes gymnasia were erected. The sick were rigidly dieted; their minds were calmed or excited by the popular superstition; and, living in the vicinity of the Temple, they were not crowded within its walls, but were introduced, at intervals, to receive the visits and prescriptions of the God. The priests upon these occasions called mystery and illusion into play, and are exquisitely ridiculed by Aristophanes; but they preserved short histories of the cases, which served as a basis for the immortal works of Hippocrates. The poorer citizens, no doubt, resorted to the Temples of Æsculapius, and the disciples of Hippocrates would not turn them away, as they, by oath, were enjoined to give gratuitous advice to the poor.

Imperfect as was the provision for medical attendance upon the poor, particularly the slave population, among the Greeks, what are we to think of the Professors of a school of Medicine, who, looking down with something like pharisaic contempt upon the inhumanity of the ancients, propose in the 19th century, with the experience of past

* Paris, 1831. This Treatise is in modern Greek, and is one of the first medical works t has appeared in that language.

ages before them, and the discoveries of modern science at their command, to erect an Hospital in a narrow street of London, where fever is scarcely ever absent, and to collect the sick poor within the walls of a dreary house; looking neither upon groves, streams, smiling fields, nor hills, but upon a damp, putrid churchyard? And what are we to think of the men—who notoriously undertake this project *to support a declining school*—when they appeal to the benevolent public, invoke Christianity, and arrogate to themselves a peculiar sanctity?

To return to the history of Hospitals. Christianity created Hospitals and Monasteries in the same age. The sick were nursed by monks and fanatical *parabolani*. It is evident that Hospitals existed before the age of JUSTINIAN, for in his code, constructed from the ancient laws, mention is made of legacies left to establish Asylums for pilgrims and sick persons. JUSTINIAN beautified an Hospital founded by St. SAMSON in Constantinople. Several Hospitals for pilgrims were established in Jerusalem, in the 7th century; the first was erected there by the merchants of Amalfi. In the 11th century, the Emperor ALEXIS built an immense establishment, open to the poor, the orphan, and the widow. It was two stories high, and had a chapel for convalescents; the sick were attended by monks, and the directors gave in their accounts annually. In the 12th century, the Hospital of Byzantium enjoyed a high reputation; it was called the Hospital of the Forty Martyrs; the relics of the last of whom had cured JUSTINIAN of a dangerous disease! Hospitals rapidly increased after the Crusades. The Knights Templar, the Knights of St. John of Jerusalem, of St. Lazarus, of the Holy Spirit, sprang out of the wealth devoted to Hospitals by the piety of Europe. Leprosy prevailed; thousands of lazar-houses were founded.

Lepers were driven from society. If they met a traveller upon the road, they were compelled to fly precipitately; or to place themselves so that the wind might carry away the exhalations from their bodies. The wretches were imprisoned in the lazar-houses, or, where these did not exist, in huts (*cucurbitæ, stellæ*); but they received no medical treatment; and if the lazar-house was a blessing, it was one for which it would not have been difficult to find a substitute. Medical treatment in the Hospitals of the middle ages there was none; or it was of the most delusive and irrational description. As a body, the monks had no knowledge of medical science; their fantastic doctrines, their credulity, and their duplicity, combined to render them incapable of investigating the laws of nature, and they had recourse to senseless signs, holy water, and extreme unction. The hospital knights, the distinguished surgeon, Gui de Cauliac, observed, "Cum conjurationibus et potionibus "et olea et lana atque caulis folio procurant "omnia vulnera, fundantes se super illo, "quod Deus posuit virtutem suam in verbis, "herbis, et lapidibus!" Could the institutions in which the treatment of the sick was carried on upon these principles, be of the slightest service to mankind? And when it is recollected that the sick were often brought from the open country, and always crowded in the Hospitals as closely as the beds would stand together, while the windows were small, and the whole establishment was dirty, no doubt can be entertained that they destroyed twice as many as they saved.

It will be right, nevertheless, to give the Christians of the middle ages credit for good intentions, although they would have done better to restrict themselves more literally to the obedience of the divine injunction, "*Visit the sick*," instead of collecting the sick and infirm under the same roof, to save trouble and expense.

The utility of Hospitals as medical schools, is unquestionable; and it is remarkable, that Heretics and Mahometans founded the first Hospitals for clinical instruction. The Nestorians had in Dschondisabour an Hospital, where medical students acquired the treatment of diseases; and into which

they were only admitted after having undergone certain examinations. Mr. ARNOTT said nothing of this in his lecture; perhaps because the pain of mentioning Nestorians among the orthodox, would have overbalanced the pleasure he must have felt in stating that in Dschondisabour, as well as in the Strand, it was necessary to have read the Psalms of David, before being permitted to commence clinical study. The Arab Caliphs established a College of Medicine in Bagdad, so early as the eighth century; and it was the duty of the directors of the College to examine all candidates who were destined to practise medicine. The Caliphs also founded the first Hospitals and Colleges of Pharmacy in Bagdad, *to promote the study of medicine*. This was an enlightened step, and its policy cannot be questioned. Mr. ARNOTT dwells on the utility of Clinical Hospitals, and says, emphatically:—

"We are indebted for the origin of Hospitals to the promulgation of *that religion which it is one of the main objects of this College to encourage and support*."

But he suppresses the notorious fact, that *the Mahomedans* first founded Hospitals for the medical treatment of the sick, as well as for clinical instruction; and thus ungenerously insinuates that science and humanity are the exclusive offspring of the creed which the College "supports," or, more accurately, "which supports the College."

The history of Hospitals in this country begins with the Foundation Hospitals of St. Bartholomew and St. Thomas. We shall return to the discussion of this important subject.

THE SANATORIUM.

To the Editor of THE LANCET.

SIR:—I trust that your vigilance will point the attention of the profession to a report which has appeared in the public prints, of a meeting for the establishment of a concern, which the projectors are pleased to call a *Sanatorium*. The principle of this appears to be, to extend the dispensary or medical-club system to the higher ranks of life, and the circumstance that the proposal has emanated, not from an exigent public, but chiefly from a few individual members of the profession, is sufficient to create a suspicion as to its motive.

Notwithstanding that I believe it to be impracticable to work this hybrid creation—half hospital, half tavern, as it is intended to be,—I feel that the medical public are called upon to denounce the principle of it, as a *piratical* attempt, under the flag of CHARITY, to rob the profession, and particularly the younger members of it, for the benefit of a few. The statements which are advanced in support of such an establishment imply that, as a body, the profession is *grasping* and *oppressive*, and that the heads of families and *offices* are regardless and cruel to those who are immediately dependant on them, whilst it offers a bonus to those who are *really* so. I should not be fearful of leaving the public to decide the first part of this statement, and the profession the latter, but sure I am that the medical man deserves every imputation which may be brought against him, if he have not sufficient *esprit de corps*, or sense of justice towards himself, to resist by his own efforts and the enlistment of his friends, the recognition of an establishment, which is at once so unjust and unnecessary. The advocacy of Mr. Chadwick is, perhaps, more graceless than that even of its medical friends, who, having done so much to degrade a noble science, by working, *ex officio*, the medical part of the New Poor-Law, to the injury and insult of the profession, volunteers his support for further encroachments upon their common. If, however, these gentlemen have so large a stock of philanthrophy, unexpended and unemployed, let them seek a more legitimate object, and if it should occur to their minds that there are members of their own body, more destitute than the objects their fancy has pourtrayed, let them at least pause before they narrow their means of support.

I would willingly go through the prospectus, but at this moment I have hardly time to write even thus hastily upon the subject; but for fear no one else should notice it, I was desirous of calling your

attention to it without the delay of another week. I am, Sir, your obedient servant,

M. B.

London, November 6, 1839.

*** The above letter reached us as our remarks of last week were going to press. The observations of our correspondent are, in every respect, sound and excellent, and we give them a place this week, although we had anticipated his object.—Ed. L.

WESTMINSTER MEDICAL SOCIETY.

Saturday, November 9, 1839.

Dr. Crowne, President.

SINGULAR PATHOLOGICAL CONDITION OF THE LEFT PLEURA.

Dr. Golding Bird exhibited a pathological specimen, curious from its anomalous character, rather than from its practical importance. The patient from whom it was taken died in half an hour after his admission into Guy's Hospital, in a sinking state. No previous history of the case was obtained, but the patient had a general bloated appearance, his lips were livid, he was cold, and in a state of collapse. A small quantity of urine which he made was found to be albuminous. It was suspected that he was perishing from the disease known under the name of "Bright's Kidney." The body was examined about 36 hours after death. The kidneys were found to be in the first stage of the suspected disease. The heart was somewhat hypertrophied; the sigmoid valves slightly ossified. The lungs afforded an admirable specimen of pulmonary apoplexy, being saturated with blood. On cutting open the left cavity of the pleura, a curious body was observed, pushing that membrane forwards, and projecting into the cavity of the chest, exactly like a number of pig's teats. On examining them, they bore a greater resemblance to them than anything else. They proved to be of a steatomatous character; and it appeared, on further examination, that a steatomatous tumour having formed in the anterior mediastinum, had pushed the pleura of the left side forward, and produced the singular appearance observed.

MR. WINSLOW READ A PAPER ON SUICIDE, MEDICALLY CONSIDERED.

Dr. J. Johnson thought that the inference drawn by the author of the paper, that suicide was generally the result of some phase of mental derangement, admitted of doubt, unless, indeed, every deviation from sound sense was to be considered insanity. From some observation and experience, he, Dr. Johnson, had come to the conclusion that suicide occurred under three different sets of circumstances. In the first of these, and that by far the most numerous, the suicide laboured under mental derangement; a species of monomania, in which he might reason well upon every point except that relating to self-destruction. It was well known that in many of the patients in lunatic asylums there was a great propensity to the commission of suicide. He should describe the second class of cases to be that in which passion or feeling overcame the reason for a moment, and in that moment the self-murder was effected. He should not call this insanity. He might state a case in illustration of what he meant. A female was seduced, and became pregnant; the proofs of her dishonour became more apparent every day; worked up to a feeling of desperation, the passions for a moment overcame reason, and she became a suicide. Circumstances were constantly occurring, in which despondency and despair resulted, either as the effects of misfortune or crime, in which the unhappy individual took his life, under a similar condition of mind. There was, however, a third condition, in which the act of suicide seemed to be committed as the result of a process of reasoning. Thus, we could not imagine that the great men of antiquity who fell by their own hands were insane. Cato surely could not be classed among madmen, and yet how deliberately he took away his own life! Was Cleopatra mad when she placed the asp to her bosom, or did Cassius fall upon his sword after a lost battle in a paroxysm of insanity? He, Dr. Johnson, accounted for the suicides enumerated, on very different grounds than that of madness. Among the higher classes of the ancients there existed no belief in a future state of rewards and punishments, and hence, when circumstances occurred which rendered life undesirable, they committed suicide as a relief to their sufferings. Many people in this country, and on the Continent, committed self-destruction under the same circumstances.

Mr. Snow objected to the classification of those who desired to kill others with those who had a wish to kill themselves, as adopted by the author. The mental state of the individual under the two circumstances was widely different.

Dr. A. T. Thomson admitted the ingenuity of Dr. Johnson's classification of the causes of suicide, but he did not consider it founded on a correct basis. He, Dr. Thomson, believed that, under all circumstances, the suicide was in a state of insanity. The question was, however, one of great complexity, and one could hardly be expected to enter into it properly without previous preparation. He could not believe but that in all cases, if they were sufficiently inquired into, insanity would be found present. In the

second class of cases mentioned by Dr. Johnson, in which the victim of seduction took her own life, he, Dr. Thomson, conceived that if the suicide was the result of a temporary impulse, or mastery of the passions, it would be more frequent. How many women were there placed under the same circumstances of shame and disgrace who did not commit suicide? In those cases in which suicide was committed, who should say that the individual laboured under no hereditary taint of insanity, for it must not be forgotten that the hereditary tendency to madness might lie dormant for one or more generations, and then become suddenly developed, and at that moment the unhappy victim might destroy himself. As to the third class mentioned by Dr. Johnson, the speaker believed that Cato, and the other examples cited, were all probably insane. Look at the kind of men who committed suicide; those, over whom pride had such influence, that its mortification produced insanity. As to the suicide reasoning before he committed self-destruction, that was no proof that he was not insane. Who so acute a reasoner as the madman when the premises were good? The want of rest frequently produced suicide. The victim of persecution or of despondency, whose path was covered with thorns, and who saw no ray of hope to guide him on, became afflicted with insanity, and committed suicide for the rest that he expected the grave would afford. Spenser had well described this class of cases in his description of the "Cave of Despair," in which the visitor to that abode is worked upon to the commission of suicide by the description of the quiet and rest which the shades of death can give. Lord Byron seemed to have appreciated this state of mind as productive of insanity and suicide, when, in his poem of the *Gaiour*, he makes the half-mad seeker after peace exclaim to his comforter,

"I would not if I could be blest;
I seek no paradise, but rest."

He, Dr. Thomson, would repeat, that insanity, either acquired or hereditary, would be found present in all cases of suicide.

Dr. JOHNSON inquired whether Cassius was insane, when he fell upon his sword immediately after he had lost a battle. Had the battle been won, would he have committed suicide? If, as Dr. Thompson imagined, the desire of rest or of future felicity stimulated to suicide, then Christianity, that held out so many bright hopes to the believer, would be the great cause of suicide.

Dr. THOMSON said that it was a known fact that the numbers who committed suicide was in a ratio of the progress of civilisation.

Dr. GUY said that the great point of discussion would turn upon the meaning of the word insanity, as employed by the various speakers. He should draw the distinction between insanity and excited feeling in this way. If the person had a strong control over his feelings, he was not mad; if he had no control, he was insane. He believed that in the great majority of cases in Paris, the suicide was tempted to destroy himself by the occurrence of circumstances which rendered life unhappy. The Parisians generally had no belief in a future state, and they reasoned that when life was not desirable it was as well to die. This was not insanity in the usual sense of the word.

Dr. THOMSON said that many religious people committed suicide from a strong belief that they were among the number of the "elect," and would be saved; yet who would say that these individuals were not mad?

Mr. CLARKE referred to the case of the Rev. Mr. Colton, author of "Lacon," in illustration of his belief that suicides were not always insane. The individual referred to, after writing a great number of aphorisms against suicide, becoming reduced in circumstances, finished his career with a pistol, having the moment before written his last laconic to the effect, "that when life was unbearable, death was desirable, and suicide justifiable."

Dr. G. BIRD inquired what influence education might have had upon the production of suicide among the ancients. Many of the self-murderers of antiquity belonged to the stoic school of philosophy, which acknowledged suicide as a virtue under certain circumstances. They believed in no future state, and looked for eternal rest in the grave. He could not believe that this was insanity, but rather the result of the dogmas of education. There was a singular circumstance relating to suicide, which he had not found mentioned by authors, and this was the intense desire that a person looking from a great height had to throw himself over. A watchmaker of Aberdeen, who had been looking over the precipice of Loch ny Gair, suddenly felt a great desire to precipitate himself from the height, and having first taken a step or two back, threw himself over. He (Dr. Bird) had, on one occasion, felt the same desire, and so strong was it that he nearly fainted from its effects.

Mr. WINSLOW said, that Esquirol, in his work on insanity, had related the case of an individual who had a great desire to throw himself from a precipice. Sir C. Bell had related a case, which occurred to the surgeon who preceded him at the Middlesex Hospital. A man was admitted who had cut his throat at a barber's shop: the barber came to see him, and was told that the life of the patient had been saved by his not having divided the carotid arteries, the position of which were pointed out. The barber immediately left the hospital, and cut his throat

in the court-yard, both carotids having been divided by the incision.

Mr. QUAIN said, no doubt that many persons, like Byron, on taking a razor in their hand to shave with, had the thought pass their minds that it could also destroy life by cutting the throat. If this thought were acted upon, it showed the presence of temporary insanity. The author of the paper had alluded to the influence of political excitement in producing suicide, and alluded to recent cases, in which, however, it was not proved that politics had anything to do with the matter. The author of the paper had also referred to the numerous murders and few suicides in Dublin; but he had brought no statistical facts forward to warrant the assertion he had made. Mr. Winslow had also stated that he considered the publication of cases of suicide by the press tended to excite people to self-destruction. He (Mr. Quain) did not altogether disagree with this opinion; but he considered the propagation of the assertion that had been made, that there was an hereditary tendency in individuals to the commission of suicide, would be attended with more dangerous consequences. The treatment of the subject which had been advanced required a vast deal of philosophical calmness. It had been stated that suicides were invariably worked up into insanity before they destroyed themselves; the assertor of this, then, had no right to conclude that the tendency to suicide was hereditary, except in so far as the tendency to insanity was hereditary.

The discussion on the subject was adourned at a late hour.

MEDICAL SOCIETY OF LONDON.

Monday, November 11th, 1839.

Mr. PILCHER, President.

ON THE CO-EXISTENCE OF ABDOMINAL INFLAMMATION WITH RHEUMATISM.

A paper was read from the pen of Dr. T. Thomson, on the co-existence of obscure inflammation of the bowels, with rheumatism.

The object of the author, as we understood, was to draw the attention of the society to the co-existence of a very obscure kind of gastro-enteritis with rheumatic inflammation of the joints, in which the latter was the obvious disease, and the former so much masked by the rheumatism, in some cases, that it was liable to be entirely overlooked by the practitioner. The writer of the paper did not consider that the abdominal disease occurred as a metastasis, or was vicarious, of the rheumatic affection, but that it was simply co-existent with it, not, however, accidentally so, but more or less dependent upon the cause which produced the rheumatism. He explained the "alliance" between the two diseases in question by stating as his opinion, that that cause which in one person produced rheumatism only, would in another person produce both rheumatism and gastro-enteritis. There might, however, in some cases, be intestinal irritation previous to the affection of the joints, and this irritation was increased by the occurrence of the rheumatic attack. He admitted that intestinal irritation was a frequent accompaniment of diseases situated in various parts of the body, and arising from various causes, but he considered that there was something in rheumatism peculiarly favourable to the production of this irritation or inflammation. There was this much, however, of the metastatic character about the diseases, that the "irritation" in the bowels reduced the "irritation" in the joints; while opposed to this was the fact, that the remedies employed for the subduction of the rheumatism tended to increase the intestinal disease. In the treatment of cases in which the disease in question co-existed, the abdominal irritation or inflammation was to be treated as though no rheumatic affection of the joints existed; not forgetting however the general condition of the patient.

Two cases were related out of a great number which had come under the author's observation, as illustrative of the views advanced. In one, colchicum had been given for the cure of the rheumatism, but the irritation in the bowels, although probably increased by, did not result from the remedy, inasmuch as it had existed for some time before. In the other case no colchicum had been given.

Mr. DENDY said that if the intestinal irritation was not metastatic or vicarious of rheumatism, then it must be an accidental disease. As an illustration of the effects of repellants on some diseases, he had been informed by Dr. Copland of a case in which the repulsion of itch produced meningitis in a child.

Mr. HEADLAND considered that as far as the enteritis was concerned in the cases related, it had no reference to the rheumatic affection, but was more likely to be accidental and dependent upon a peculiar state of the atmosphere. He had seen many such cases of late, and, in the treatment of them, the idea of rheumatism had never crossed his mind.

Dr. THOMSON observed that the cases he had related occurred in 1834.

Mr. PROCTOR thought the cases related very instructive, as showing that disease might become so altered in character as to require a different mode of treatment from that before pursued. In low fevers, where the stimulating plan had been followed up, it sometimes occurred, owing to the balance of the circulation becoming disturbed, that a particular organ became congested, and it was necessary to employ mild antiphlogistic treatment.

Dr. BENNETT considered that there was a more intimate connection between the rheumatism and the abdominal disease than Mr. Headland suspected. The latter might not be either metastatic or vicarious of the rheumatism; but he thought that there was a great tendency generally to intestinal irritation, either before or after the occurrence of rheumatism. This might or might not be influenced by season. He believed in many cases where patients had fallen into a low typhoid state during a rheumatic attack, the low fever had its origin in inflammation of the mucous membrane of the alimentary canal, which had been overlooked.

Mr. ROBARTS had long ago noticed the co-existence of intestinal inflammation with rheumatism, a fact which had been first pointed out to him by Dr. Stroud. He had seen many cases illustrating this co-existence.

Mr. BRYANT saw nothing unusual in the co-existence of abdominal irritation or inflammation with rheumatism. It was commonly observed in other diseases of the body. He was more inclined to think, in Dr. Thomson's cases, that the disease in the abdomen had resulted from metastasis of the affection of the joints. There was no organ of the body of a similar structure to that first affected, to which there might not be a metastasis of rheumatism. He had lately seen the case of a young lady, who had only a slight inflammatory blush round the outer malleolus on one side, and in whom there were no physical or other signs of heart affection, except that the action of that organ was somewhat excited; and yet this patient died, and most extensive pericarditis was found to have existed. We could not be too cautious in examining internal organs in all rheumatic attacks.

Mr. CRISP had frequently seen inflammation of the mucous membrane of the bowels in rheumatism, as the result of the treatment employed. In these cases he used calomel and opium, and thus cured the rheumatism and the intestinal disease at the same time. He had never seen metastasis of rheumatism, either to the pleura or peritoneum.

REGULATIONS RESPECTING THE PRACTICE OF MEDICINE IN AUSTRIA.

By M. BERNS, *Professor at the University of Vienna.*

THE rapid progress of Medical Reform within the last few years, indicates that the period is not far removed when the medical institutions of this country will undergo a thorough and radical revision. In the mean time we continue to record, for future reference, information on the medical organisation in foreign countries.

Two follies distinguish that of Austria,—compulsion as to the *place* of study, and the enforcement of a "course" of education:—

Austria, according to M. Berns, is distinguished, amongst the civilised states of Europe, for its excellent laws on the administration of medical affairs. The laws refer principally to medical education in the different schools; to the appointment of district surgeons, and to the regulation of the practice of pharmacy. In the Austrian Universities, medicine and surgery are not made distinct branches of education. As in France, the student is compelled to follow all the lectures on medicine and surgery, which are justly considered as inseparable. To obtain the diploma of Doctor in Medicine or Surgery, the candidate must study, during five consecutive years, in one of the National Universities. The first three years are devoted to anatomy and physiology, the accessory sciences, and the theory of medicine; the two last years are devoted to therapeutics, and to medico-chirurgical clinical study. The following is a tabular view of the course of education enjoined:—

First Year.

1st session of six months—Anatomy, one course; chemistry, medical botany, and physics, one course.

2nd session—Anatomy, one course; natural history and botany, one course.

Second Year.

1st session—Anatomy and physiology, one course; general chemistry, one course.

2nd session—Anatomy and physiology, one course; pharmacy and animal chemistry, one course.

Third Year.

1st session—Courses on general pathology, therapeutics, materia medica, dietetics, prescribing, surgery and midwifery.

2nd session—A continuation of the former courses, with short courses on bandages and surgical instruments.

Fourth Year.

1st session—A course on practical medicine, and one on clinical medicine.

2nd session—Continuation of the former courses, and one on veterinary medicine.

Fifth Year.

Completion of the last courses. Instead of veterinary medicine, however, the student follows one of medical jurisprudence, and one of political medicine.

N.B. The students who have finished their theoretical studies, are divided into "practitioners" and "auditors;" the former are allowed to take charge of a certain number of patients, whom they examine under the inspection of the clinical professor. If the "practitioner" execute his task with a

sufficient degree of skill, the professor allows him to continue; if not, he assists him, and asks various questions connected with the diagnosis, prognosis, and treatment of the case. The "auditor" accompanies the "practitioner" in his morning and evening visits during three to six months, and then passes into the latter class.

Before commencing the study of medicine, each student must present a certificate, testifying that he has studied, during three years, philosophy and rhetoric in some national school, and the prescribed order of study must be rigorously followed.

Each professor is obliged to examine his pupils publicly, one a week, and during half an hour at the least; and at the end of each session the whole of the pupils are examined together, the director of the University and a commissioner of education being present.

Certificates are granted after such examinations, but the law enjoins the professors to be extremely circumspect and rigorous, especially in the examinations of the *first* year; and this in order to prevent incapable or idle persons from obtaining admission amongst a class of men to whom the public health is entrusted. The falsification of any certificate is regarded as a crime, for which the guilty person is expelled from all the universities and handed over to the common law.

Each student pays thirty florins a year, but foreigners are admitted to the courses without any payment.

On presenting himself for the final examination, the student must show that he had previously been admitted into the first class; he must present the history of two cases which he has treated in the presence of his fellow pupils and under the clinical professor; finally, he must draw up a report on some question of medical jurisprudence. All this done, he then undergoes two examinations: one in anatomy, botany, natural history, physiology, medical and surgical pathology, semeiology, and therapeutics; the second comprehends chemistry, medical jurisprudence and political medicine, ophthalmology, materia medica, the art of prescribing, and medico-chirurgical clinique. He may answer in Latin or in his native tongue. He also writes a medical dissertation, and sustains a few propositions. The cost of the degree is about twenty pounds. The candidate for the degree of doctor in surgery undergoes the same examination, but more stress is laid on the theory and practice of surgery. He also performs, publicly, two operations on the dead body, during which he explains the nature of the operation, its advantages, &c., and prepares all the instruments and dressings as if he were about to operate on the living body.

Students who are not of the Catholic religion are permitted to take out their diplomas in the same manner, having merely obtained a dispensation; but they are not forced to take any oath or other obligation which is contrary to their religious principles.

In another article we shall explain the nature of the laws by which the practice of medicine in Austria is governed.—*French Lancet*, Nos. 120 and 121. 1839.

PRESERVATION OF SUBJECTS FOR DISSECTION.

After a variety of experiments, MM. Babington and Rees have succeeded in preserving subjects for anatomical purposes, by injecting the vascular system with pyroxylic spirit. The following account shows how well this substance is calculated for the purposes to which it was applied:—

On the 15th of May last, a convict at Woolwich, 23 years of age, died of inflammation of the bowels; and, on the 18th, his body was sent to Guy's Hospital for dissection. It was neither œdematous, nor in a state of decomposition, and was in a fair condition for anatomical purposes. On the 21st, a gallon of pyroxylic spirit was injected into the aorta, and the body was placed in a water-tight shell, or trough, made of slate, and loosely covered with a wooden lid. This trough was deposited in a cellar, the stone floor of which was about two feet below the surface of the ground. On the 29th, the lid was removed, for the first time, and the body was found to be perfectly fresh. From the 29th of May to the 12th of June, the subject was examined, by removing the lid of the trough every two or three days, and no change was perceptible until the latter date. At that time the only sign of alteration was the appearance of two or three brown streaks—evidently veins—on the inside of the thighs, and a separation of the cuticle of the hands from the true skin, which began to assume a greenish hue. Every other part of the body was perfectly preserved, and of natural colour. There was no putrid odour on opening the lid of the trough, but the characteristic smell of the pyroxylic spirit was in some measure passing off. An incision into the middle of the right thigh, showed that the fat, muscles, blood-vessels and nerves were in a complete state of preservation. It should be observed, that ever since the injection of the subject, the weather had been that of established summer; and that a second body, received from Woolwich, was so decomposed in three days after its arrival, as to be totally unfit for dissection. On the last examination, as well as on two or three previous occasions, fluid was observed to occupy the bottom of the trough, and this it was thought advis-

able to remove; it was likewise determined to throw another quart of pyroxylic spirit into the aorta.

On the 24th of June, the body was removed to the dissecting-room, and placed on the table, for the purpose of being thoroughly dissected. With the exception of a greenish appearance on the outer part of the left thigh, and the brown streaks already mentioned, it appeared, when brought into the light, perfectly preserved. The skin on the back of the hands, instead of putrifying, had dried, and become transparent; while the greenness of the left thigh proved, on incision, to be quite superficial. The dissection was undertaken by eight gentlemen, and completed by the 13th of July; and it is testified by them all, that every anatomical purpose was as fully answered as if the subject had been quite recent. The various parts, on being laid open, were of natural colour and of firm texture. The tendons and ligaments were silvery and white, and the nerves had lost none of their tenacity. The pectoral muscles alone formed an exception to the natural colour which was elsewhere maintained; this appeared to be attributable to the macerating effects of a wetted cloth that had been laid upon the breast, to prevent evaporation through the aperture, by which the injection had been accomplished. The parts which were exposed by dissection gradually dried, changing, in the course of a day or two, to a dark colour, and, instead of putrifying, becoming hard. The brain, although it had retained its form, was soft, semi-putrid and unfit for demonstration: it must be borne in mind, however, that had the head been opened six days after death—at which period the subject was injected—this probably would have been the case.

The advantages of employing pyroxylic spirit are, 1st, its extreme fluidity, in consequence of which it may be thrown into the minutest vessels. 2ndly, its freedom from colour. 3rdly, its cheapness; for a gallon is sufficient to inject a full-sized subject; and even with the present limited manufacture of it, it is only half the price of alcohol; while it possesses infinitely greater antiseptic powers, and is, in common with that fluid, miscible with water, in all proportions. 4thly, its innocuous nature, and its freedom from any corrosive action upon steel instruments.—*Abridged from Guy's Hospital Reports*, No. IX.

MEDICAL REFORM MEETING IN THE NORTH.

We rejoice to perceive, from an advertisement in the *Gateshead Observer*, that the most influential members of the profession in the Northern counties are about to meet at Newcastle-upon-Tyne. The object of the meeting is "to deliberate on the steps proper to be taken, with a view of obtaining from Parliament such legislative measures in reference to the medical profession, as are best calculated to protect the interests of its members and promote the public welfare." The requisition of the meeting is signed by *one hundred* medical practitioners, amongst whom we observe the names of the chief physicians and surgeons in Newcastle, Gateshead, Durham, Carlisle, Sunderland, North and South Shields, Berwick, Stockton, Darlington and Appleby.

TO CORRESPONDENTS.

Mr. A. Chadwick.—The two universities are adopting measures for procuring the privilege. All our own articles on medical reform are directed to procure alterations in the law which will effect the suggested alteration.

The communications of *Mr. Burmeister*, *C. H. R.*, *Mr. Dunlop*, *F. H.*, *Dr. Lynch*, *Mr. Jeaffreson*, *Senex*, and *Mr. Shillitoe*, next week.

M. R. C. S. should authenticate his communication.

Constant Reader.—We believe that there is no appeal from the Court of Requests.

Letters received from *Mr. Campbell*, *Mr. Fenner*, and *A Practitioner*.

The letter of *Obstetricus* on the Dublin Lying-in Hospital, next week.

L. L. R.—The forgery of the signatures of "two witnesses" would be very easy, and the proposed check, therefore, since no inquiry either into the reality or the respectability of the parties could be made in the great majority of cases, would be useless. Some better precaution must be suggested.

We have had the pleasure of receiving this week the *Dublin Medical Press*, of November the 13th. Also the communications of *Mr. J. M. Richardson*, *Mr. S. Taylor*, *Mr. Gray*, *Mr. Walker*, *T. C.*, *Practitioner*, *Physic*, and *F. R. S.*

V. S.—The notice of the new microscopical observations of Mr. Lane, of the St. George's Hospital School, will be found in the lecture of Mr. Ancell which appeared in THE LANCET of October 26.

The propositions of *Mediculus* have been often made in spirit, if not in letter, in print. Although they are in every respect judicious, no special reason exists for reproducing them at the present moment. To make them, in detail, matter of *law*, is impossible, and will be unnecessary. Our correspondent may be assured, that the moment the prevailing errors in medical education are amended, the reform that he proposes will ensue.

ERRATA.—No. 844, p. 193, col. 2, line 29, for "state" read *skate*; p. 197, col. 1, line 52, for "unexceptionable" read *inexplicable*.